NOTICE:

Bids to be opened at 2:00 P.M.
APR 26 1984 at the office of
Officer in Charge of Construction
Jacksonville, North Carolina Area
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

CONTRACT N62470-82-B-4646

NAVFAC SPECIFICATION
NO. 05-82-4646 REVISED

PHYSICAL SECURITY OF RASC, BUILDING 1101

at the

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

DESIGNED BY:

Design Branch, Public Works Division
Marine Corps Base, Camp Lejeune, North Carolina

SPECIFICATION PREPARED BY:

A. E. Young, P.E.

and

J. H. Fitch, P.E.

APPROVED BY:

E. L. Rouse, P.E., Director
Design Branch, Public Works Division

R. E. Carlson, Commander, CEC, U. S. Navy
for Commander, Naval Facilities Engineering Command

CONTENTS

SECTION 00101
BIDDING INFORMATION

1. CONTENTS: This Invitation for Bids, IFB NO.N62470-82-B-4646, consists of the following documents:

(a) Bid Instruction Documents

(i) Invitation for Bids (Standard Form 20, January 1961 Ed.)
(ii) Bidding Information
(iii) Instructions to Bidders, dated March 1979

(b) Bid Submittal Documents

(i) Bid Form (Standard Form 21, December 1965 Ed.)
(ii) Representations and Certifications, Standard Form 19-B, June 1976 Ed. (REV 1982 DEC)
(iii) Bid Guaranty (Standard Form 24, June 1964 Ed.) (See Instructions to Bidders)

(c) Contract Documents

(i) Construction Contract (Standard Form 23, Jan 1961 Ed.)
(ii) Performance Bond (Standard Form 25, June 1967 Ed.)
(iii) Payment Bond (Standard Form 25A, June 1964 Ed.)
(iv) Labor Standards Provisions, dated November 1979 (Rev. 8-83)
(v) General Provisions dated March 1981 (Rev 8/83)
(vi) NAVFAC Specification No. 05-82-4646 REVISED
(vii) Drawings identified in Section 01011 of the specifications
(viii) Wage Determination Decision NC81-1201, Building Construction

2. BIDS:

2.1 Instructions to Bidders: Instructions to Bidders and Invitation for Bids, Standard Form 20, January 1961 edition, shall be observed in the preparation of bids. Bidders shall affix their names and return addresses in the upper left corner of bid envelope. Envelopes containing bids must be sealed.

2.2 Bid Guaranty: For bids of $25,000 or greater, a bid guaranty will be required as stipulated in the Instructons to Bidders.

2.3 Items of Bids: Bids shall be submitted in duplicate on Standard Form 21, Bid Form, and shall be accompanied by Standard Form 19B, Representations and Certifications, with Appendix "A" and by Bid Guaranty, all in accordance with the Bid Instruction Documents listed in paragraph 1(a) hereinbefore upon the following item:

BASE BID: Price for the entire work, complete in accordance with the drawings and specifications.

2.4 TELEGRAPHIC MODIFICATIONS OF BIDS in accordance with the instructions to bidders may be made. Two signed copies of the telegram in a sealed envelope marked "Copies of telegraphic modification of bid for PHYSICAL SECURITY OF RASC, BULDING 1101, Specification No. 05-82-4646 REVISED", should be forwarded immediately to the office to which written bids were submitted.

2.5 TELEGRAPHIC MODIFICATIONS OR WITHDRAWAL OF BIDS will be considered as specified herein. TELEPHONIC RECEIPT OF TELEGRAPHIC MODIFICATIONS OR WITHDRAWAL OF BIDS WILL NOT QUALIFY THE TELEGRAM AS TIMELY. The telegram must be received at the place specified for receipt of bids prior to the exact time set for receipt of bids.

2.6 HAND DELIVERED BIDS: All hand delivered bids must be deposited with personnel in the Contract Branch, Room No. 26, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina 28542, prior to the time and date set for bid opening. Any bids submitted by hand after the time set for receipt will not be accepted.

3. PRE-BID SITE VISITATION: To inspect the site of the work prior to bid opening, prior appointment must be made with the Officer in Charge of Construction, Jacksonville, North Carolina Area, telephone 919-451-2581. Bidders are urged and expected to inspect the site where the services are to be performed and to satisfy themselves as to all general and local conditions that may affect the cost of performance of the contract to the extent such information is reasonably obtainable. In no event will a failure to inspect the site constitute grounds for withdrawal of a bid after opening or for a claim after award of the contract.

4. CONTROLLED MATERIALS DATA: The Contracting Officer will issue a DO-C2 priority rating for procurement of critical materials. See General Provision entitled "PRIORITIES, ALLOCATIONS AND ALLOTMENTS".

5. INQUIRIES:

5.1 Plans and Specifications: Questions regarding the plans and specifications occurring prior to bid opening shall be presented to the Public Works Design Division, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina 28542, telephone 919-451-5507. Questions requiring interpretation of drawings and specifications must be submitted at least ten days before bid opening. Interpretations or modifications to specifications made as a result of questions will be made by amendment only, and unless so done, all bidders should base their bids on the plans and specifications as issued.

5.2 Bidding Procedures: All questions concerning the bidding procedures shall be presented to OICC-ROICC Contract Branch, Room 26, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina, telephone 919-451-2581.

6. AVAILABILITY OF SPECIFICATIONS, STANDARDS AND DESCRIPTIONS (1977 JUN): Specifications, standards and descriptions cited in this solicitation are available as indicated below:

a. Unclassified Federal, Military and Other Specifications and Standards (Excluding Commercial), and Data Item Descriptions: Submit request on DD Form 1425 (Specifications and Standards Requisition) to:

Commanding Officer
U. S. Naval Publications and Forms Center
5801 Tabor Avenue, Philadelphia, Pennsylvania 19120

The Acquisition Management Systems and Data Requirements Control List: DOD Directive 5000.19L, Volume II, may be ordered on the DD Form 1425. The Department of Defense Index of Specifications and Standards (DODISS) may be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. When requesting a specification or standard, the request shall indicate the title, number, date and any applicable amendment thereto by number and date. When requesting a data item description, the request shall cite the solicitation. When DD Form 1425 is not available, the request may be submitted in letter form, giving the same information as listed above, and the solicitation or contract number involved. Such request may also be made to the activity by TELEX No. 834295, Western Union No. 710-670-1685, or telephone 215-697-3321 in case of urgency.

b. Commercial Specifications, Standards and Descriptions: These specifications, standards and descriptions are not available from Government sources. They may be obtained from the publishers.

c. Availability for Examination of Specifications, Standards, Plans, Drawings, and other Pertinent Documents: The specifications, standards, plans, drawings, and other pertinent documents cited in this solicitation may be examined at the following location:

Public Works Division
Specifications and Estimates Section
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina

7. RECOVERED MATERIAL: The Contractor certifies by signing this bid/proposal/quotation that recovered materials as defined in DAR 1-2500.4 will be used as required by the applicable publications.

8. REFERENCE TO AMENDMENTS: Each bidder shall refer in his bid to all amendments to this specification; failure to do so may consititute an informality in the bid.

9. CERTIFICATE OF CURRENT COST OR PRICING DATA: (This paragraph applies to negotiated contracts of $500,000 or more, except where the price is based on adequate competition, and to change orders of $500,000 or more, to any contract.) The Contractor shall submit to the Contracting Officer a certificate in the form set forth below as soon as practicable after agreement is reached on the contract price:

This is to certify that, to the best of my knowledge and belief, cost or pricing data defined in DAR 3-807.1(a)(i) submitted, either actually or by specific identification in writing (see DAR 3-807.3(a)) to the Contracting Officer or his representative in support of _____*
are accurate, complete, and current as of _____**
day month year

This certification includes the cost or pricing data supporting any advance agreement(s) and forward pricing rate agreements between the offeror and the Government which are part of the proposal.

Firm_____
Name_____
Title_____

***
_____
Date of Execution

*Describe the proposal, quotation, request for price adjustment or other submission involved, giving appropriate identifying number (e.g. RFP No. _____).

**The effective date shall be the date when price negotiations were concluded and the contract price was agreed to. The responsibility of the Contractor is not limited by the personal knowledge of the Contractor's negotiator if the Contractor had information reasonably available at the time of agreement, showing that the negotiated price is not based on accurate, complete and current data.

***This date should be as close as practicable to the date when the price negotiations were concluded and the contract price was agreed to.

END OF SECTION

SECTION 01011
GENERAL PARAGRAPHS

1. GENERAL INTENTION: It is the declared and acknowledged intention and meaning to provide and secure physical security of RASC, complete and ready for use. This is a fixed-price contract awarded on a lump sum basis.

2. GENERAL DESCRIPTION: The work includes interior renovations such as wire mesh partitions; drywall partitions on wood framing; doors, vinyl-asbestos tile; electrical wiring; a security system to monitor entry, exit, proximity, etc., with entry control by access codes; and incidental related work.

3. LOCATION: The work shall be located at the Marine Corps Base, Camp Lejeune, approximately as shown. The exact location will be indicated by the Contracting Officer. "Contracting Officer" and "Officer in Charge of Construction (OICC)" are used interchangeably in this specification and have the same meaning.

4. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK: The Contractor will be required to commence work under the contract 15 calendar days after the date of receipt of Notice of Award, to prosecute said work diligently, and to complete the entire work ready for use within 210 calendar days. The time stated for completion shall include final cleanup of the premises. The contract completion date will be computed starting 15 calendar days after the date of Notice of Award. This 15-day period is to allow for mailing of the notice of Award and the Contractor's submission of required bonds. No exterior painting work will be permitted between 15 December and 15 March.

5. LIQUIDATED DAMAGES: In case of failure on the part of the Contractor to complete the work within the time fixed in the contract or any extensions thereof, the Contractor shall pay to the Government as liquidated damages pursuant to General Provisions clauses entitled "Termination for Default - Damages for Delay - Time Extensions', and "Damages for Delay - Defense Materials System and Priorities" the sum of $20 for each day of delay.

6. DRAWINGS ACCOMPANYING SPECIFICATION: The following NAVFAC drawings accompany this specification and are a part thereof. The drawings are the property of the Government and shall not be used for any purpose other than that contemplated by the specification:

NAVFAC DWG. NO.	TITLE
4088999	Site Location Maps, General Notes, Elevations and Details
4089000	Partial Floor Plan, Door Schedule, Elevations, Symbol Legend, and Sections
4089001	Sections and Details

7. NORTH CAROLINA SALES AND USE TAX IS REQUIRED. (See section entitled "Additional General Paragraphs".

8. SCHEDULING THE WORK:

8.1 General Scheduling Requirements: Notwithstanding the requirements of clause entitled "Progress Charts and Requirements for Overtime Work" of the General Provisions, immediately after award the Contractor shall meet with the Contracting Officer and present a schedule of work, prepared in accordance with said clause, for review by the Contracting Officer. The schedule will be reviewed at this meeting and will be retained by the Contracting Officer for final review and approval.

8.2 Work Outside Regular Hours: If the Contractor desires to carry on work outside regular hours or on Saturdays, Sundays, or holidays, he shall submit application to the Contracting Officer, but shall allow ample time to enable the Government to make satisfactory arrangements for inspecting the work in progress. At night he shall light the different parts of the work in an approved manner. All utility cutovers shall be made after normal working hours or on weekends. Anticipated costs shall be included in the bid. Regular working hours are 7:45 A.M. to 4:15 P.M., Monday through Friday, excluding holidays.

8.3 The existing building and its contents shall be kept secure at all times and the Contractor shall provide all temporary closures as required to maintain security as directed by the Contracting Officer. The Contractor shall remove all debris from the work area at the end of each shift or more frequently if required to keep the space useable. The work area may be a high security area at times. If so, Contractor personnel may have to be escorted at those times.

9. SAFETY PROGRAM: The Contractor shall implement a safety program conforming to the requirements of Federal, State and local laws, rules and regulations. The program shall include, but is not limited to, the following:

a. "Occupational Safety and Health Standards" which can be examined at the office of the Contracting Officer or be ordered from the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

b. Department of the Army, Corps of Engineers "General Safety Requirements" which may be examined at the office where bids are being received or may be purchased from the Superintendent of Documents, U. S. Government Printing Office.

c. General Provisions clause entitled "Accident Prevention".

d. NFPA 241-1975, Safeguarding Building Construction and Demolition Operations, which may be examined in the Design Branch, Public Works Division, Building 1005, Marine Corps Base, Camp Lejeune, or may be purchased from the National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210

10. TRAILER OR STORAGE BUILDINGS will be permitted on the job site, where space is available, subject to the approval of the Contracting Officer. The trailers or buildings shall be suitably painted and kept in a good state of repair. Failure of the Contractor to maintain his trailers or storage buildings in good condition will be considered sufficient reason to require their removal from the job site.

11. FACTORY INSPECTION of material and equipment for which tests at the place of manufacture are required in referenced publications will be waived if notarized copies of factory reports are furnished that show compliance with the specification requirements. Factory inspection will be required only where specified herein or in the technical sections of this specification. The Government reserves the right to charge to the Contractor any additional cost of Government inspection and tests when materials and equipment are not ready at the time inspection and tests are required by the Contractor.

12. WRITTEN GUARANTIES AND GUARANTOR'S LOCAL REPRESENTATIVE: Prior to completion of the contract, the Contractor shall obtain and furnish to the Contracting Officer's designated representative, written guarantees for all equipment and/or appliances furnished under the contract. The Contractor shall furnish with each guarantee the name, address and telephone number of the guarantor's representative nearest to the location where the equipment and/or appliances are installed, who, upon request of the using service's representative, will honor the guarantee during the guaranty period and will provide the services prescribed by the terms of the guarantee. At the time of installation, the Contractor shall tag each item of warranted equipment with a durable oil and water resistant tag approved by the Contracting Officer. Leave the date of acceptance and inspector's signature blank until the project is accepted for beneficial occupancy. The tag shall show the following information:

EQUIPMENT WARRANTY TAG

Type of Equipment _____

Accepted Date _____

Warranted Until _____

Under Contract No. N62470-

Inspector's Signature _____

STATION PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE

13. EXTRA OBLIGATIONS OF THE CONTRACTOR:

13.1 Dust covers and dustproof partitions shall be provided to protect the computers and data processing equipment from the work.

13.2 Temporary enclosures or partitions shall be provided to ensure the temperature at the data processing equipment remains between 60 degrees Fahrenheit and 90 degrees Fahrenheit, and the humidity between 208 and 808 relative. The equipment may remain in operation throughout the contract.

END OF SECTION

SECTION 01012
ADDITIONAL GENERAL PARAGRAPHS

1. UTILITIES:

1.1 GOVERNMENT-FURNISHED UTILITIES: The Government will furnish water and electricity from the nearest available outlet free of charge for pursuance of work under this contract. If the nearest available outlet cannot be utilized by the Contractor because of improper voltage, insufficient current, improper pressure, incompatibale connectors, etc., it shall be the responsibility of the Contractor to provide temporary utilities as required.

1.2 ENERGY AND UTILITIES CONSERVATION: The Contractor shall carefully conserve utilities furnished without charge. The Contractor, at his own expense and in a manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines and remove the same prior to final acceptance of the construction. (DAR 7-603.30)

1.3 OPERATION OF STATION UTILITIES: The Contractor shall not operate nor disturb the setting of any control devices in the Base utilities system, including water, sewer, electrical and steam services. The Government will operate the control devices as required for normal conduct of the work. The Contractor shall notify the Contracting Officer, giving reasonable advance notice, when such operation is required.

1.4 LOCATION OF UNDERGROUND UTILITIES: Where existing piping, utilities, and underground obstructions of any type are indicated in locations to be traversed by new piping, ducts, and other work provided hereunder, and are not indicated or specified to be removed, the elevations of the existing utilities and obstructions shall be determined before the new work is laid closer than the nearest manhole or other structure at which an adjustment in grade could be made. For any additional work required by reason of conflict between the new and existing work, an adjustment in contract price will be made in accordance with General Provisions clause entitled "Differing Site Conditions (1968 FEB)." The Base Telephone Officer, telephone 451-2531, will show the Contractor approximate locations of all buried telephone and fire alarm cables after receiving ten days notice. The locations of underground utilities shown is only approximate and the information is incomplete.

2. CHANGED CONDITIONS: Wherever changed conditions as defined in General Provisions clause entitled "Differing Site Conditions (1968 FEB)" are encountered, and wherever conditions exposed during the course of the work necessitate a change from quantities indicated or specified as either estimated quantities or as a basis for bids, whether or not provisions for a change in price for such variation is specified, the Contracting Officer must be notified in writing and written directions to do so must be obtained before quantities stated in the contract documents are exceeded.

3. SUBCONTRACTORS AND PERSONNEL: Promptly after the award of the contract, the Contractor shall submit to the Contracting Officer, in triplicate, a list of his subcontractors and the work each is to perform. On this form shall appear the names of the key personnel of the Contractor and subcontractors, together with their home addresses and telephone numbers, for use in event of emergency. From time to time as changes occur and additional information becomes available, the Contractor shall amplify, correct, and change the information contained in previous lists.

4. PRINTS FURNISHED TO CONTRACTOR: Six copies of the project specifications, and six sets of the drawings accompanying the specifications, will be furnished the Contractor. Additional sets of the specifications and drawings can be obtained, if required, by application to the Contracting Officer, provided that the need therefor is justified to the satisfaction of the Contracting Officer.

5. SCHEDULE OF PRICES: The original and seven copies of the Schedule of Prices shall be submitted to the Contracting Officer for approval. Payments will not be made until the Schedule of Prices has been submitted and approved.

6. CONTRACTOR'S INVOICE AND CONTRACT PERFORMANCE STATEMENT: Requests for payment in accordance with the terms of the contract shall consist of:

a. Contractor's Invoice on Form NAVFAC 7300/30(10/81), which shall show, in summary form, the basis for arriving at the amount of the invoice
b. Contractor's Monthly Estimate for Voucher (5ND GEN 5265/1)
c. Affidavit to Accompany Invoice (5ND LANTDIV 4-4235/4)(Rev 5/81)

Forms will be furnished by the Contracting Officer. Monthly invoices and supporting forms for work performed through the 15th of the month shall be submitted to the Contracting Officer by the 20th of the month in the following quantities:

a. Contractor's Invoice - Original and five copies
b. Contractor's Monthly Estimate for Voucher - Original and two copies
c. Affidavit - Original

7. OPTIONAL REQUIREMENTS: Where a choice of materials or methods is permitted herein, the Contractor will be given the right to exercise the option unless stated specifically otherwise.

8. QUARANTINE FOR IMPORTED FIRE ANT (CLNC 2/82): All of Onslow, Jones and Carteret Counties and portions of Duplin and Craven Counties, have been declared a generally infested area by the United States Department of Agriculture for the imported fire ant. Compliance with the quarantine regulations established by this authority as set forth in USDA Quarantine No. 81 dated 9 October 1970, and USDA Publication 301.81-2A of 23 July 1976, is required for operations hereunder.

8.1 The quarantine applies to materials originating from Camp Lejeune and the Marine Corps Air Station (Helicopter), New River, which are to be transported outside the Onslow County or adjacent suppression areas.

8.2 Certification is required for the following articles, and they shall not be moved from the reservation to any point outside the Onslow County and adjacent designated areas unless accompanied by a valid inspection certificate issued by an officer of the Plant Protection and Quarantine Program, USDA:

(1) Bulk soil
(2) Used mechanized soil-moving equipment
(3) Any other products, articles, or means of conveyance if it is determined by an inspector that they present a hazard of spread of the imported fire ant and the person in possession thereof has been so notified.

8.3 Authorization for movement of equipment outside the imported fire ant regulated area shall be obtained from USDA, APHIS, PPQ, Rural Route 6, Box 53, Wilmington, NC 28504; telephone (919) 343-4667. Requests for inspection shall be made at least two days in advance of the date of movement to permit arrangements for the services of authorized inspectors. The equipment shall be prpared and assembled so that it may be readily inspected. All soil on or attached to equipment, supplies and materials, shall be removed by washing with water and/or such other means as necessary to accomplish complete removal. Resulting spoil shall be wasted as directed.

9. EMERGENCY MEDICAL CARE: Only emergency medical care is available at Camp Lejeune Government facilities for Contractor employees who suffer on-the-job injury or disease. Emergency care will be rendered at the prevailing rates established in BUMEDINST 6320.4 series. Reimbursement shall be made by the Contractor to the Naval Regional Medical Center Collection Agent upon receipt of a monthly statement.

10. PROPRIETARY NAMES: Names indicated for colors, textures and patterns of materials are for the purpose of color, texture and pattern selection only. Other manufacturers' materials are acceptable provided they closely approximate colors, textures and patterns indicated and provided they conform to all other requirements.

11. NORTH CAROLINA STATE AND LOCAL SALES AND USE TAX (1977 JAN):

(a) As used throughout this clause, the term "materials" means building materials, supplies, fixtures and equipment which become a part of or are annexed to any building or structure erected, altered, or repaired under this contract.

(b) If this is a fixed-price contract as defined in the Defense Acquisition Regulation, the contract price includes the North carolina state and local sales and use taxes to be paid with respect to materials, notwithstanding any other provision of this contract. If this is a cost-reimbursement type contract as defined in such regulation, any North Carolina state and local sales and use taxes paid by the Contractor with respect to materials shall constitute an allowable cost under this contract.

(c) At the time specified in paragraph (d) below:

(i) The Contractor shall furnish the Contracting Officer certified statements setting forth the cost of the materials purchased from each vendor and the amount of North Carolina state and local sales and use taxes paid thereon. In the event the Contractor makes several purchases from the same vendor, such certified statement shall indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices and the North Carolina state and local sales and use taxes paid thereon by the Contractor. Any local sales or use taxes included in the Contractor's statements must be shown separately from the state sales and use tax. The Contractor shall furnish such additional information as the Commissioner of Revenue of the State of North Carolina may require to substantiate a refund claim for sales or use taxes.

(ii) The Contractor shall obtain and furnish to the Contracting Officer similar certified statements by his subcontractors.

(d) If this contract is completed before the next October 1, the certified statements to be furnished pursuant to paragraph (c) above shall be submitted within 60 days after completion. If this contract is not completed before the next October 1, such certified statements shall be submitted on or before the 30th day of November of each year and shall cover taxes paid during the twelve-month period which ended the preceding September 30.

(e) The certified statements to be furnished pursuant to paragraph (c) above shall be in the following form:

I hereby certify that during the period _____to_____, (name of Contractor or subcontractor) paid North Carolina state and local sales and use taxes aggregating $_____(state) and $_____(local) with respect to building materials, supplies, fixtures and equipment which have become a part of or annexed to a building or structure erected, altered or repaired by (name of Contractor) for the United States of America, and that the vendors from whom the property was purchased, the dates and numbers of the invoices covering the purchases, the total amount of the invoices of each vendor, the North Carolina state and local sales and use taxes paid thereon, shown separately, and the cost of property withdrawn from warehouse stock and North Carolina state and local sales or use taxes paid thereon are as set forth in the attachements hereto.

12. AS-BUILT DRAWINGS: During the progress of the work, one full-size print of each of the drawings accompanying this specification shall be neatly and clearly marked in red to show all variations between the construction actually provided and that indicated or specified in the contract documents. The as-builti drawings shall be kept up-to-date at the work site at all times during the contract, and shall be available for inspection by the Contracting Officer upon request. The Contractor shall also mark the drawings to indicate the exact location of any underground utility lines discovered in the course of the work. Where a choice of materials and/or methods is permitted herein, and where variations in the scope or character of the work indicated or specified are permitted either by award on bidding items specified for that purpose or by subsequent change to the contract, the as-built drawings shall define the construction actually provided. The representation of such variations shall conform to standard drafting practice and shall include such supplementary notes, legends, and details as may be necessary for legibility and clear portrayal of the as-built construction; the marked prints shall be subject to approval of the Contracting Officer before acceptance. Upon completion of the work, the completed as-built drawings shall be presented to the Contracting Officer.

END OF SECTION

SECTION 01040
CUTTING AND PATCHING

1. CUTTING shall be done by sawing along straight lines. The amount cut out shall be the minimum necessary to accommodate the new work. No flame cutting will be permitted without written permission of the Officer in Charge of Construction.

2. HOLES shall be rotary drilled. The size shall be the minimum necessary to accommodate the new work.

3. PATCHING shall be done with materials which match the existing in color, quality and surface texture when finished.

END OF SECTION

SECTION 01401. QUALITY CONTROL

1. APPLICABLE PUBLICATION: The following publication of the issue listed below, but referred to thereafter by basic designation only, forms a part of this specification to the extent indicated by the references thereto:

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

ASTM E329-77 Standard Recommended Practices for Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction.

2. QUALITY CONTROL of this contract will be administered under the General Provisions Clause entitled "Contractor Inspection System".

3. DEFINITIONS:

3.1 Factory Tests: Tests made on various products and component parts prior to shipment to the job site, including but not limited to such items as transformers, boilers, air conditioning equipment, electrical equipment, and precast concrete.

3.2 Field Tests: Tests or analyses made at, or in the vicinity of, the job site in connection with the actual construction.

3.3 Product: The term "product" includes the plural thereof and means a type or a category of manufactured goods, construction, installations and natural and processed materials or those associated services whose characterization, classification or functional performance determination is specified by standards.

3.4 Person: The term "person" means associations, companies, corporations, educational institutions, firms, government agencies at the Federal, State and Local level, partnerships, and societies, as well as divisions thereof, and individuals.

3.5 Testing Laboratory: The term "testing laboratory" means any "person", as defined above, whose functions include testing, analyzing, or inspecting "products", as defined above, and/or evaluating the designs or specifications of such "products" according to the requirements of applicable standards.

3.6 Certified Test Reports: Reports of tests signed by a qualified professional attesting that the test results reported are accurate and that items tested either meet or fail to meet the stated minimum requirements. These test reports include those performed by Factory Mutual, Underwriters' Laboratories, Inc., and others.

3.7 Certified Inspection Reports: Reports signed by approved inspectors attesting that the items inspected meet the specification requirements other than any exceptions included in the report.

3.8 Manufacturer's Certificate of Conformance or Compliance: A certificate signed by an authorized manufacturer's official attesting that the material or equipment delivered meets the specification requirements.

4. SUBMITTALS shall be prepared in accordance with this specification and the General Provisions and submitted to the Contracting Officer for approval. Each submittal shall be accompanied with a cover letter signed by the Contractor. Each item proposed to be incorporated into the contract shall be clearly marked and identified in the submittals, and shall be cross-referenced to the contract drawings and specifications so as to identify clearly the use for which it is intended. Each sheet of submittal shall be stamped with the Contractor's certification stamp. Data submitted in a bound volume or on one sheet printed on two sides, may be stamped on the front of the first sheet only. The Contractor's certification stamp shall be worded as follows:

"It is hereby certified that the (equipment)(materials) shown and marked in this submittal is that proposed to be incorporated into Contract Number _____, is in compliance with the contract drawings and specifications, can be installed in the allocated spaces, and is submitted for Government approval. Certified by _____ Date _____"

The person signing the certification shall be one designated in writing by the Contractor as having that authority. The signature shall be in original ink. Stamped signatures are not acceptable.

4.1 Submittal Status Logs: The Contractor shall maintain at the job site an up-to-date submittal status log showing the status of all submittals required by the contract. A sample format of an acceptable log is attached at the end of this section. While the use of this sample format is not required, any other format must contain the same information as shown on the sample.

4.2 Samples, shop drawings, manufacturer's data, certifications and data required of the Contractor: Specification MIL-D-1000 shall be used as a guide and its use is encouraged, for all drawings and data submitted by the Contractor. Conformance to the provisions of Specification MIL-D-1000 is not mandatory for maps, sketches, presentation drawings, perspectives, renderings, and all other drawings not requiring Naval Facilities Engineering Command drawing numbers. Before starting the fabrication or installation of any of this work, the Contractor shall submit to the Contracting Officer for, and receive approval of, in accordance with the General Provisions, such drawings as may be required, including all items specified in the applicable paragraphs of the technical sections of this specification. Seven copies of all submittals to be approved by the Contracting Officer shall be forwarded.

4.3 Identification: All catalog cuts, shop drawings, samples and other data submitted for approval shall specifically identify the specification paragraph or contract drawing by number where each item submitted is required to be provided. All submittals shall be clearly marked in

ink to indicate the specific item(s) submitted for approval. Samples shall be clearly labeled with strong tags, firmly affixed, or indelible markings to identify the contract number, contractor, manufacturer, and item name.

4.4 Certified Test Reports: Before delivery of materials and equipment, four certified copies of the reports of all tests listed in the technical sections and referenced publications shall be submitted and approved. The testing shall have been performed in a laboratory meeting the requirements specified herein. The tests shall have been performed within three years of submittal of the reports for approval. Test reports shall be accompanied by certificates from the manufacturer certifying that the material and equipment proposed to be supplied is of the same type, quality, manufacture, and make as that tested.

4.5 Manufacturer's Certificates of Conformance or Compliance: Manufacturer's certification furnished by the Contractor on items of materials and equipment incorporated into the work will be accepted only when this method will assure full compliance with the provisions of the contract, as determined by the Contracting Officer. Preprinted certifications will not be acceptable. All certifications shall be in the original. The original of all manufacturer's certifications shall name the appropriate item of equipment or material, specification, standard, or other document specified as controlling the quality of that item, and shall have attached thereto certified copies of test reports upon which the certifications are based. All certificates shall be signed by the manufacturer's official authorized to sign certificates of conformance or compliance.

4.6 Laboratory Reports shall cite the contract requirements, the test or analysis procedures used, the actual test results, and include a statement that the item tested or analyzed conforms or fails to conform to the specification requirements. Each report shall be conspicuously stamped on the cover sheet in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements as the case may be. All test reports shall be signed by the representative of the testing laboratory authorized to sign certified test reports. The Contractor shall arrange for immediate and direct delivery of the signed original of all reports, certifications, and other documentation to the Contracting Officer.

4.7 Tabulation of Tests: In addition to the General Provisions requiremtns for CQC test reports, prior to final payment the Contractor shall obtain from each laboratory a tabulation of all tests it has performed in connection with the construction contract, including conforming or nonconforming, and repeated test results. The tabulation(s) shall be certified as complete, and signed by the authorized representative of the laboratory, and shall be delivered to the Contracting Officer.

5. QUALITY CONTROL REQUIREMENTS: In accordance with the General Provisions Clause entitled "Contractor Inspection System", the Contractor shall inspect and test all work under the contract and maintain records of the inspections and tests. Approvals, except those required for field

installations, field applications, and field tests, shall be obtained before delivery of materials and equipment to the project site. Surveillance of the inspection system will be performed by the Contracting Officer.

5.1 Factory Tests: Unless otherwise specified, the Contractor will arrange for factory tests when they are required under the contract.

5.2 Factory Inspection: Unless otherwise specified, the Contractor will arrange for factory inspection when required under the contract.

5.3 Field Inspections and Tests by the Contractor: The Contractor shall furnish all equipment, instruments, qualified personnel, and facilities necessary to inspect all work and perform all tests required by the contract. All inspections and tests performed and test results received each day shall be included in the Daily Report to Inspector.

5.5 Approval of Testing Laboratories: All laboratory work under this contract shall be performed by a laboratory approved by the Government, whether the laboratory is employed by the Contractor, or is owned and operated by the Contractor. The basis of approval includes the following:

a. Testing laboratories performing work in connection with concrete, steel, and bituminous materials shall comply with ASTM E329, except that the Contracting Officer will perform the function of paragraphs 3.4 and 3.5 therein in the absence of other Government approval.

b. Testing laboratories performing work not in connection with concrete, steel, or bituminous materials shall comply with sections 3 and 4 of ASTM E329, except that the Contracting Officer will perform the functions of paragraphs 3.4 and 3.5 therein in the absence of other Government approval.

5.6 Repeated Tests and Inspections: The Contractor shall repeat tests and inspections after each correction made to nonconforming materials and workmanship until tests and inspections indicate the materials, equipment, and workmanship conform to the contract requirements. The retesting and reinspections shall be performed at no additional cost to the Government.

5.7 Daily Report to Inspector: The Daily Report to the Inspector Form NAVFAC 4330/34 shall be submitted to the Contracting Officer by 10:00 A.M. on the working day following the day the work was performed.

SUBMITTAL STATUS LOG

"SEE INSTRUCTIONS ON REVERSE BEFORE FILLING IN"

CONTRACT NUMBER | SHORT TITLE | LOCATION | PAGE ____ OF ____ | CONTRACTOR

SUBMITT'L/ TRANSMITT'L NO.	DESCRIPTION OF ITEMS	SPECIFICATION SECTION REQUIRING SUBMITTAL	SUBMITTAL REQUIRES: SHOP DWGS.	CATALOG DATA	SAMPLE	CERTIFICATION	TEST DATA	CONTRACTOR APPV'D	GOV'T APPROVED	CONTRACTOR ACTION: INSERT ACTION CODE	DATE OF ACTION	DATE FORWARDED FROM ROICC	ROICC ACTION: INSERT ACTION CODE	DATE OF ACTION	DATE: RECEIVED FROM ROICC	MAT'L/EQUIP RECEIVED ON SITE	APPROVED BY CONTRACTOR	REMARKS
(a)	(b)	(c)	(d)					(e)		(f)		(g)	(h)		(i)	(j)	(k)	

INSTRUCTIONS

1. This form may be used by the Contractor for listing all material submittals that require action by either the Contractor or the Government.

2. Columns (a) through (e) should be completed by the Contractor and must include all submissions that are required by the specifications.

3. As submittals are received and processed, the remaining columns are to be completed by the Contractor.

4. In those instances where the Contractor has approved the submittal under his contract responsibility, there may be a dual Action Code under column (f); e.g., "A/E", indicating approved as submitted and forwarded to the OICC for record purposes.

5. In column (f) for those items requiring OICC action (Action Code "D"), the reason for forwarding to the OICC should be entered in the column (l), the Remarks column; e.g., gov't approval required; waiver requested because of variance, substitution, etc.

6. Where no Government action is required, (for Contractor review/approval items), there need be no entry in columns (h) and (i).

7. Column (j) is completed when material or equipment is delivered to the project. Column (k) is completed only after verification that the delivered item is that represented by the approved submittal.

ACTION CODE: To be used when completing columns (f) and (h)

A - Approved as submitted

B - Approved as noted

C - Disapproved

D - Forwarded to OICC for action

E - Forwarded to OICC for record purposes

END OF SECTION

SECTION 01560
ENVIRONMENTAL PROTECTION

PART 1. GENERAL

1.1 ENVIRONMENTAL PROTECTION PLAN: The Contractor may be responsible for the preparation and submission of an Environmental Protection Plan. After the contract is awarded, but prior to the commencement of the work, the Contractor shall meet with the Contracting Officer, or his representative, and discuss the proposed Environmental Protection Plan. The meeting shall develop mutual understanding relative to details of environmental protection, including required reports and measures to be taken should the Contractor fail to provide adequate protection in an adequate and timely manner. Not more than 14 days after the meeting, the Contractor shall submit for approval his proposed Environmental Protection Plan, if so required.

1.2 GENERAL REQUIREMENTS: The Contractor shall provide and maintain environmental protection during the life of the contract as defined herein. The Contractor's operations shall comply with all Federal, State and Local regulations pertaining to water, air, solid waste, and noise pollution.

2. PRODUCTS

2.1 DEFINITIONS OF POLLUTANTS:

2.1.1 Non-Hazardous Wastes: Solid or liquid substances that are to be discarded by the Contractor and that normally do not constitute a hazard to man or to the environment. This includes, but is not limited to, paper, metal (other than toxic metals such as lead and mercury), masonry, wood, brick, stone, asphaltic concrete, plastics, rubber, rubbish and concrete.

2.1.2 Hazardous Wastes: Solid and liquid substances that are to be discarded by the Contractor and that constitute a significant active or potential hazard to man and/or to the remainder of the environment. This includes, but is not limited to asbestos, glass, lead, mercury, pesticides, herbicides, other toxic chemicals and waste, liquid petroleum products, human excrement, garbage, sediment and radioactive materials.

2.1.3 Protection of Natural Resources: It is intended that the natural resources within the limits of permanent work performed under this contract be preserved in their existing condition or be restored to an equivalent or improved condition upon completion of the work. The Contractor shall confine his construction activities to areas defined by the work schedule, plans, and specifications.

3. EXECUTION

3.1 CONTROL AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS WASTES:

3.1.1 Non-hanzardous wastes, except rubble, shall be picked up and disposed of daily or placed in containers which are emptied on a weekly schedule. All handling and disposal shall be so conducted as to prevent contamination of the site and other areas. The Contractor shall transport all such waste off the Base, unless he desires to use the Base Sanitary Landfill or rubble disposal areas.

3.1.2 If transporting any material off Government property, the Contractor shall provide the Contracting Officer a copy of State and/or local permit which reflects the responsible agency's approval of the disposal area and proposed waste disposal methods.

3.1.3 Rubble such as masonry, stone, concrete without reinforcing steel, and brick may be deposited as directed on the Base. Upon completion, the work and disposal area shall be left clean and natural looking. All signs of temporary construction and activities incidental to construction of the required permanent work in place shall be obliterated.

3.1.4 Optional use of Base Landfill shall require compliance with Landfill rules. Such rules do not allow accepting recyclable metals nor reusable wood or lumber over six feet in length.

3.2 HAZARDOUS WASTES:

3.2.1 Garbage Disposal: The Contractor shall transport any garbage to the Base Sanitary Landfill. However, the preparation, cooking and disposing of food are strictly prohibited on the project site.

3.2.2 Liquid wastes shall be stored in corrosion-resistant containers, removed from the project site, and disposed of not less frequently than monthly unless directed otherwise. Disposal of liquid waste shall be in accordance with Federal, State and Local regulations. Fueling and lubricating of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spills and evaporation. For oil and hazardous material spills which may be large enough to violate Federal, State and Local regulations, the Contracting Officer shall be notified immediately. The Base Sanitary Landfill will not accept liquid wastes nor empty drums.

3.2.3 Asbestos disposal in the Base Sanitary Landfill will be mandatory when friable asbestos is encountered. If such asbestos is encountered, provisions for handling or disposal shall comply with the applicable section of this specification; if not specified, such requirements shall be as directed.

SECTION 04200
MASONRY WORK

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The following publications form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

C5-59(1968)	Quicklime for Structural Purposes
C55-75(1980)	Concrete Building Brick
C90-75(1981)	Hollow Load-Bearing Concrete Masonry Units
C91-79	Masonry Cement
C144-76a	Aggregate for Masonry Mortar
C150-81	Portland Cement
C207-79	Hydrated Lime for Masonry Purposes
C270-80a	Mortar for Unit Masonry

1.2 DELIVERY AND STORAGE: Cement, lime and other cementitious materials shall be delivered to the site and stored in unbroken bags, barrels, or other approved containers, plainly marked and labeled with the manufacturers' names and brands. Mortar materials shall be stored in dry, weathertight sheds or enclosures, and shall be stored and handled in a manner which will prevent the inclusion of foreign materials and damage by water or dampness. Masonry units shall be handled with care to avoid chipping and breakage. Materials stored on newly constructed floors shall be stacked in such manner that the uniformly distributed loading does not exceed 50 psf. Masonry materials shall be protected from contact with earth and exposure to the weather, and shall be kept dry until used. Materials containing frost or ice shall not be used.

PART 2 - PRODUCTS

2.1 CONCRETE BLOCK shall conform to ASTM C90, Grade N-1 or N-11.

2.2 CONCRETE BRICK shall conform to ASTM C55, Grade N-1 or N-11.

2.3 PORTLAND CEMENT shall be Type I, conforming to ASTM C150.

2.4 LIME PASTE shall be made with pulverized quicklime, or with hydrated lime, which shall be allowed to soak not less than 72 hours before use; except that hydrated lime processed by the steam method shall be allowed to soak not less than 24 hours, and shall be made by adding the lime to water. In lieu of hydrated lime paste for use in mortar, the hydrated lime may be added in the dry form.

2.4.1 Hydrated lime shall be Type S, conforming to ASTM C207.

2.4.2 Pulverized quicklime shall conform to ASTM C5, and shall pass a No. 20 sieve, and 90 percent shall pass a No. 50 sieve.

2.5 SAND shall conform to ASTM C144.

2.6 WATER for mixing shall be potable.

PART 3 - EXECUTION

3.1 ENVIRONMENTAL CONDITIONS: Masonry shall not be laid when the air temperature is below 40 degrees Fahrenheit on a falling thermometer, or when it appears probable that temperatures below 40 degrees Fahrenheit will be encountered before the mortar has set, unless adequate means are provided for protecting the work from freezing. Protection shall consist of heating and maintaining the temperature of the masonry materials at not less than 40 degrees Fahrenheit and maintaining an air temperature above 40 degrees Fahrenheit on both sides of the masonry for not less than 72 hours. Work will not be permitted with or on frozen materials. Masonry work may be started at 34 degrees Fahrenheit on a rising thermometer.

3.2 WORKMANSHIP: Lay brick or block with mortar joints in alignment with existing work, if practicable. All brick shall be laid in a full bed of mortar. All joints shall be tooled to match existing joint.

3.3 MORTAR MIXING: Mortar materials shall be measured in proper containers that will insure that the specified proportions of materials will be controlled and accurately maintained during the progress of the work. Measuring materials with shovels will not be permitted. Unless specified otherwise, mortar shall be mixed in proportions by volume. The aggregate shall be introduced and mixed in such a manner that the materials will be distributed uniformly throughout the mass. A sufficient amount of water shall be added gradually and the mass further mixed, not less than three minutes, until a mortar of the plasticity necessary for the purposes intended is obtained. The mortar shall be machine-mixed in suitable mixers, of the type in which the quantity of water can be controlled accurately and uniformly. Mortar boxes, pans, and mixer drums shall be kept clean and free of debris or dried mortar. The mortar shall be used before the initial setting of the cement has taken place. Retempering of mortar in which cement has started to set will not be permitted. Antifreeze compounds, salts, or any other substance used to lower the freezing point of mortar will not be permitted.

3.3.1 Mortar shall be Type S, consisting of one part Portland cement, 1/4 to 1/2 part lime paste, 3-3/4 to 4-1/2 parts sand, conforming to ASTM C270. Prepackaged mortar mix may be used provided that the mix has a cement-to-lime proportion the same as specified herein for Type S mortar mix conforming to ASTM C270. Air content of the prepackaged mix shall not exceed 13 percent when tested in accordance with ASTM C91 and the mix shall not contain any non-cementitious fillers. Mortar made with a prepackaged mix shall consist of one part mix to not more than three parts sand.

3.3.2 Grout shall consist of amixture of cementitious materials and aggregate as specified hereinafter. Water shall be added in sufficient quantity to produce a fluid mixture. Fine grout shall be provided in grout spaces less than two inches in any horizontal dimension or in which clearance between reinforcing and masonry is less than 3/4-inch. Coarse grout shall be provided in grout spaces two inches or greater in all horizontal dimensions. Clearance between reinforcing and masonry is not less than 3/4-inch.

a. Fine grout shall be mixed in proportions of one part Portland cement, 1/4 part lime paste, and 3 parts sand.

b. Coarse grout shall be mixed in proportions of one part Portland cement, 1/4 part lime paste, three parts sand, and three parts pea gravel passing a 3/8-inch sieve.

3.4 CLEANING: At the completion of the masonry work, holes in new exposed masonry shall be pointed, and defective joints shall be cut out and tuck pointed solidly with mortar. Exposed suraces of brickwork shall be thoroughly wetted with clear water and scrubbed with a solution of not more than one part of muriatic acid to nine parts of water, applied to an area not over 15 to 20 square feet at a time, with stiff fiber brush. Immediately after cleaning, each area shall be rinsed thoroughly with clear water. Other exposed masonry surfaces shall be cleaned to remove all excess mortar and as necessary to receive finishes specified in other sections. Work which may bae damaged, stained, or discolored, shall be protected during the cleaning process; work that is damaged, stained, or discolored shall be restored to its original condition or replaced.

END OF SECTION

SECTION 05500
MISCELLANEOUS METALS

1, APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

A153-78 Zinc-Coating (Hot-Dip) on Iron and Steel Hardware
A525-78 Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality

2. ZINC-COATING shall be applied to all ferrous metals. Zinc-coating shall conform to ASTM A153 or ASTM A525, coating designation G90.

3. NON-FERROUS METALS shall be protected from corrosion by a coating according to manufacturer's recommendation.

4. DISSIMILAR METALS shall be protected by having contact surfaces coated with a heavy coat of bituminous paint. Aluminum surfaces to be embedded in plaster shall be protected with a heavy coat of bituminous paint or clean non-staining or non-yellowing colorless coating.

5. FASTENERS, ANCHORS, ANCHOR BOLTS and similar items necessary for installation of the work shall be provided.

6. ALUMINUM FASCIA shall be aluminum conforming to ASTM B209, Alclad 3003, Alclad 3004, Alclad 3005, thickness 0.040-inch, affixed to the plywood with adhesive.

7. RAILINGS shall be double rail and post type, fabricated of aluminum, designed to present a pleasing appearance, and to perform as a safety barrier. Provide railings complete with anchorages, floor plates, and end caps, with a satin clear natural anodized finish.

END OF SECTION

SECTION 06201
CARPENTRY AND WOODWORK

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

FEDERAL SPECIFICATIONS:

DD-G-451	Glass, Float or Plate, Sheet, Figured (Flat for Glazing)
TT-P-25	Primer Coating, Exterior (Undercoat for Wood, Ready-Mixed White and Tints)

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS (NBS):

1-74	Construction and Industrial Plywood
20-70(1)	American Softwood Lumber Standard

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA):

LD 3	High Pressure Decorative Laminates

NATIONAL FOREST PRODUCTS ASSOCIATION:

National Design Specification for Wood Construction 1977 Edition
Supplement-1978 Design Values for Wood Construction

1.2 DELIVERY AND STORAGE: Deliver lumber and plywood to the job site in an undamaged condition. Stack materials to insure proper ventilation and drainage and protect against dampness baefore and after delivery. Store materials under cover in a well-ventilated enclosure and protect against extreme changes in temperature and humidity. Replace defective or damaged materials.

1.3 GRADEMARKING:

1.3.1 Lumber: Each piece or each bundle shall be identified by the grademark of a recognized association or independent inspection agency that specializes in the particular species used. Such association or independent inspection agency shall be certified by the Board of Review, American Lumber Standards Committee, to grade the species used, in accordance with NBS PS-20.

1.3.2 Plywood: Each sheet of plywood shall bear the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the plywood. The mark for softwood plywood shall identify the plywood by species group or identifiction index, and shall show glue type, grade, and compliance with U. S. Department of Commerce Product Standard PS-1.

1.4 SIZES AND PATTERNS OF WOOD PRODUCTS: Yard and board lumber sizes shall conform to NBS PS-20. Except as indicated or specified otherwise, sizes are nominal. Size references, unless otherwise specified, are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the standard under which the product is produced.

1.5 MOISTURE CONTENT OF WOOD PRODUCTS: Air-dry or kiln-dry lumber. The maximum moisture content of wood products at time of delivery to the job site shall be 15 percent for exterior treated or untreated finish lumber and trim 4-inch or less in nominal thicknness or 19 percent for moisture content of other material.

PART 2 - PRODUCTS

2.1 LUMBER shall be No. 2 Southern Pine.

2.2 PLYWOOD shall be exterior type, C-D grade, 3/4-inch thick, conforming to NBS PS-1.

2.3 HARDWARE: Provide sizes, types, and spacing of manufactured building materials recommended by the product manufacturer except as otherwise indicated or specified.

2.4 FORMICA shall conform to NEMA LD3, Grade GP 50 or PF 42, satin finish.

2.5 FABRICATION OF COUNTERTOPS: Fabricate with a core of exterior plywood, or particleboard, and lumber, glued and screwed to form an integral unit. Bond laminated plastic under pressure to all exposed surfaces. The countertop unit shall be either routed and self-edged with NEMA GP 50 plastic, or rounded, coved, and covered with NEMA GP 42 plastic, at the option of the Contractor.

2.6 GLASS shall conform to Fed. Spec. DD-G-451, Type 1, Class 1, Quality 94.

PART 3 - EXECUTION

3.1 GENERAL: Carpentry shall be fitted closely, set accurately to the required lines and levels, and shall be secured in place in a rigid and substantial manner. All framing members necessary shall be provided as necessary for the proper completion of the work. Spiking, nailing, and bolting shall be done in an approved manner. Spikes, nails, and bolts shallbe of the proper size, and care shall be taken so as not to split the members. Member shall be drilled accurately for bolting. Suitable washers shallbe provided under heads. Nuts and bolts shall be drawn up tight.

END OF SECTION

SECTION 07951
CALKING AND SEALANTS

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATION: The publication listed below forms a part of this specification to the extent referenced. The publication is referred to in the text by basic designation only.

FEDERAL SPECIFICATION (Fed. Spec.):

TT-S-00230C & Am 2	Sealing Compound, Elastomeric Type, Single Component (for Calking, Sealing, and Glazing in Buildings and Other Structures)

1.2 GENERAL: The Contractor shall replace all calking and sealants disturbed by work under this contract with new calking or sealants and provide all new calking or sealants specified or indicated.

1.3 SAMPLES: Prior to delivery of the calking and sealants to the job site, a one-carriage sample shall be submitted to and approved by the Contracting Officer. The sample shall be accompanied by certified laboratory test reports showing that the calking and sealants to be furnished have been tested within the last 12 months and meet the requirements of the applicable specifications. The sample containers shall include the same informatin on the labael as specified herein for containers delivered to the job site.

1.4 ENVIRONMENTAL CONDITIONS: The ambient temperature shall be within the limits of 40 and 90 degrees Fahrenheit when the calking and sealants are applied.

1.5 DELIVERY AND STORAGE: Materials shall be delivaered to the job in the manufacturer's original unopened containers. The containers shall include the following information on the label: supplier, name of material, formula or specification nuber, lot number, color, date of manufacture, mixing instructions, shelf life, and curing time when applicable at the standard conditions for laboratory tests. All materials shall be carefully handled and stored to prevent inclusion of foreign materials, or exposure to temperatures exceeding 90 degrees Fahrenheit. Calking compound or components outdated as indicated by shelf life shall not be used.

PART 2 - PRODUCTS

2.1 CALKING shall conform to TT-S-230.

2.2 SEALER, PRIMER, TAPE AND BOND-PREVENTING MATERIALS shall be as recommended in the manufacturer's printed literature.

2.3 BACK-UP MATERIAL shall be closed-cell resilient urethane or polyvinyl-chloride foam, closed-cell polyethylene foam, closed-cell sponge of vinyl or rubber, polychloroprene tubes or beads, polyisobutylene extrusions, oilless dry jute, or rope yarn. Back-up materials shall be non-absorbent, non-staining, and compatible with the sealant used. Tube or rod stock when used shall be rolled into the joint cavity.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION: The surfaces of joints to bae sealed shall abe dry. Oil, grease, dirt, chalk, particles of mortar, dust, loose rust, loose mill scale, and other foreign substances shall be removed from all joint surfaces to be sealed. Oil or grease shall be removeo with solvent and surfaces shall be wiped with clean cloths.

3.1.1 Concrete and Masonry Surfaces: Where surfaces have baeen treated with curing compounds, oil, or other such materials, they shall be removed by sandblasting or wire brushing. Laitance, efflorescence and loose mortar shall be removed from the joint cavity.

3.1.2 Steel surfaces to be in contact with sealant shall be sandblasted or, if sandblasting would not be practical or would damage adjacent finish work, the metal shall be scraped and wire brushed to remove loose mill scale. Protective coatings on steel surfaces shall be removed by sandblasting or by a solvent that leaves no residue.

3.2 APPLICATION:

3.2.1 Tape shall be placed on the finished surface on one or both sides of joint cavity to protect adjacent finish surfaces from primer or compound smears. Tape shall be removed within ten minutes after joint has been filled and tooled.

3.2.2 Bond-preventive materials shall be installed on the bottom of the joint cavity and other surfaces indicated to prevent the sealant from adhering to the surfaces covered by the bond-preventive materials. The materials shall be carefully applied to avoid contaminatin of adjoining surfaces or breaking bond with surfaces other than those covered by the bond-preventive materials. At the option of the Contractor, backstop material with bond-breaking characteristics may be installed in lieu of bond-preventive materials specified.

3.2.3 Backstops: The back or bottom of joints constructed deeper than indicated shall be packed tightly with backstop material to provide a joint of the depth indicated. Where necessary to provide a backstop for oil and resin sealant, the joint shall be packed tightly with rope yarn.

3.2.4 Primer shall be used on concrete masonry unit, wood, or other proous surfaces in accordance with instructions furnished with the sealant. Primer shall be applied to the joint surfaces to be sealed. Surfaces adjacent to joints shall not receive primer.

3.2.5 Calking shall be gun-applied with a nozzle of proper size to fit the width of joint indicated and shall be forced into grooves with sufficient pressure to expel air and fill the groove solidly. Sealant shall be uniformly smooth and free of wrinkles. Joints shall be tooled slightly concave after sealant is installed. When tooling white or light color sealant, dry or water-wet tool shall be used.

11. CLEANING: The surfaces adjoining the calked and sealed joints shall be cleaned of smears and other soiling resulting from the calking and sealing application as work progresses.

END OF SECTION

SECTION 08110
HOLLOW METAL DOORS AND HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

FEDERAL SPECIFICATIONS (Fed. Spec.):

HH-I-524C	Insulation Board, Thermal (Polystyrene)

MILITARY SPECIFICATIONS (Mil. Spec.):

DOD-P-21035A	Paint, High Zinc Dust Content, Galvanizing Repair (Metric)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

A526-80	Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality
A591-77	Steel Sheet, Cold-Rolled, Electrolytic Zinc-Coated
D1621-73 (R 1979)	Compressive Properties of Rigid Cellular Plastics
D1622-63 (R 1975)	Apparent Density of Rigid Cellular Plastics
D1623-78	Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
D2126-75	Response of Rigid Cellular Plastics to Thermal and Humid Aging
D2863-77	Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)

AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI):

A115.1-76	Door and Frame Preparation for Mortise Door Locks for 1-3/4 Inch Doors
A115.2-80	Door and Frame Preparation for Bored or Cylindrical Locks for 1-3/8 Inch and 1-3/4 Inch Doors
A115.4-76	Door and Frame Preparation for Lever Extension Flush Bolts
A115.5-73	Door and Frame Preparation for 190 Series Deadlock Strikes
A115.6-76	Door and Frame Preparation for Unit Door Locks
A115.11-76	Door and Frame Preparation for Mortise Locks for 1-3/8 Inch Doors
A115.13-74	Door and Frame Preparation for Tubular Deadlocks

THE STEEL DOOR INSTITUTE (SDI):

100-80	Recommended Specifications - Standard Steel Doors and Frames
107-72	Hardware on Steel Doors (Reinforced-Application)

1.2 SUBMITTALS:

1.2.1 Catalog Data: Submit manufacturer's descriptive literature for all doors and frames. Include data and details on door construction, panel reinforcement, and door edge construction.

1.2.2 Shop Drawings: Submit shop drawings for doors and frames showing elevations, constructon details, metal gages, hardware provisions, and installation details. Include a schedule showing door and frame locations.

1.2.3 Certificates of Conformance or Compliance: Submit manufacturer's certificates attesting that doors, frames, and accessories meet the requirements specified herein.

1.2.4 Samples: Submit two color samples of each color for prefinished doors. Where colors are not indicated, submit manufacturer's standard colors and patterns to the Contracting Officer for selection.

1.3 DELIVERY AND STORAGE: Deliver doors, frames, and accessories undamaged and with protective wrappings or packaging. Store doors and frames on platforms under cover in clean, dry, ventilated and accessible locations, with 1/4-inch air space between doors. Remove damp or wet packaging immediately and wipe all affected surfaces dry. Relace damaged materials with new.

PART 2 - PRODUCTS

2.1 STANDARD HOLLOW METAL DOORS: SDI-100, except as specified otherwise for Type III doors. Prepare doors to receive hardware specified in Section 08710, "FINISH HARDWARE." Exterior doors shall have top edge closed flush. Doors shall be 1-3/4 inches thick, unless otherwise indicated.

2.1.1 Doors shall be extra heavy doors conforming to SDI-100, Type III. Fill exterior doors with plastic foam panel reinforcement and thermal break.

2.1.2 Reinforcement shall consist of one of the following:

a. Continuous vertical stiffeners of not lighter than 22 gage steel, spaced not more than six inches apart and spot welded to both face sheets at intervals not greater than six inches.

b. An innner grid system of vertical and horizontal members of not lighter than 18 gage steel, welded or interlocked for maximum strength, spaced not to exceed an average of 12 inches in either direction, and spot welded to both face sheets at intervals not greater than six inches.

c. Continuous vertical or horizontal stiffeners of not lighter than 18 gage steel, spaced not to exceed 12 inches on centers, and spot welded to both face sheets (or face panels) at intervals not greater than six inches.

d. A continuous, formed sheet steel truss core, full height and width, spot welded to face sheets at intervals not greater than six inches in both directions.

e. A continuous moisture-resistant honeycomb core laminated to the inside of both face panels with a water-resistant adhesive. Honeycomb material shall have a crushing strength of not less than 4500 psf when tested in accordance with procedure A or B of ASTM D1622.

f. A plastic foam core panel reinforcement shall be as specified herein.

2.2 PLASTIC FOAM PANEL REINFORCEMENT: Provide plastic foam core panel reinforcement by one of the following methods:

a. A continuous rigid polyurethane plastic foam core, foamed-in-place or in board form bonded to the steel face sheets, and free of voids or other defects that could affect serviceability. The foam shall have the following properties when tested in accordance with the listed test methods:

PROPERTY	REQUIREMENT	TEST METHOD
Flammability (Oxygen Index)	14 percent min.	ASTM D2863
Density, Core	2 lb. per cu. ft., nom.	ASTM D1622
Compressive Strength	20 psi, min., at 10 percent deformation or at yield point, whichever occurs first	ASTM D1621, Procedure A
Tensile Strength	20 psi, min., and not greater than foam to steel face sheet bond strength	ASTM D1623, Type B Specimen (Board form polyurethane shall be bonded with adhesive used for bonding in door.
Dimensional Stability	Plus or minus 5 percent volume change, max., and no visible distortion after 7 days exposure at minus 15 degrees F and 200 degrees F	ASTM D2126, dimensions and visual examination measurements only
Holes and Voids	No single hole or void larger than 1/4 inch in any direction and no more than 8 holes up to 1/4 inch in size in any direction per 8 square feet of surface area	Visual examination

b. A rigid, molded polystyrene plastic foam bead board core bonded to the steel face sheets with a thermosetting adhesive. The foam core shall have the following properties when tested in accordance with the listed test methods:

PROPERTY	REQUIREMENT	TEST METHOD
Flammability (Oxygen Index)Sec. max.	AEB 60 mm. max., ATB 50	ASTM D2863
Density	1.0 lb. per cu. ft., nom.	ASTM D1622
Compressive Strength	10 psi, min., at 10 percent deformatin or at yield point, whichever occurs first	ASTM D1621, Procedure A
Tensile Strength	18 psi, min., and not greater than foam to steel face sheet bond strength	ASTM D1623, Type B specimen (Polystyrene foam shall be bonded with adhesive used for bonding in door.)
Dimensional Stability	Plus or minus 5 percent volume change, max., and no visible distortion after 7 days exposure at minus 15 degrees F and 165 degrees F	ASTM D2126, dimensions and visual examination measurements only
Holes and Voids	No single hole or void larger than 1/4 inch in any direction, and no more than 8 holes up to 1/4 inch in size in any direction per 8 square feet of surface area	Visual examination
Bead Fusion	Essentially fused bead structure indicated by an excess of broken or sheared beads	Fed. Spec. HH-I-524, bead fusion test

2.3 HOLLOW METAL FRAMES shall conform to SDI-100, except as otherwise specified. Form frames for standard and custom hollow metal doors to sizes and shapes indicated, with knockdown type construction at corners.

2.3.1 Knock-Down Type Frame Joints: Design corner joints for simple field assembly by concealed tenons, splice plates, or interlocking joint that will produce square, rigid corners and a tight fit and maintain the alignment of adjoining members. Provide locknuts for all bolted connections.

2.3.2 Stops and Beads: Form stops and beads from 20 gage steel for interior glazed openings and other locations where louvers, panels, or fixed glass is indicated in hollow metal frames. Provide synthetic rubber or felt gaskets where indicated. Secure beads to frames with oval-head, countersunk Phillips-head self-taping sheet metal screws or concealed clips and fasteners. Space fasteners approximately 12 to 16 inches on centers. Miter molded shapes at corners. Butt or miter square or rectangular beads at corners.

2.3.4 Anchors:

2.3.4.1 Floor Anchors: Provide floor anchors at bottom of each jamb member. Provide adjustable anchors, drilled for 3/8-inch diameter anchor bolts. Where floor fill ocurs, terminte bottom of frames at the indicated finished floor levels and support by adjustable extension clips resting on and anchored to the structural slabs.

2.3.4.2 Fasteners: Provide concealed type fasteners for trim applied to rough bucks.

2.4 INTEGRAL GASKET WEATHER STRIPPING: Black synthetic rubber gasket with tabs for factory fitting into factory slotted frames, or extruded neoprene foam gasket made to fit into a continuous groove formed in the frame for exterior door. Insert gasket in groove after frame is finish painted.

2.5 HARDWARE PREPARATION: Reinforce, drill, and tap doors and frames to receive finish hardware. Prepare doors and frames for hardware in accordance with the applicable requirements of ANSI A115.1 through A115.6, A115.11 and A115.13, and SDI-107. Drill and tap for surface-applied hardware at the project site. Build additional reinforcing for surface-applied hardware into the door at the factory. Locate hardware in accordance with the requirements of SDI-100, as applicable. Punch door frames, with the exception of frames that will have weatherstripping, to receive a minimum of two rubber or vinyl door silencers on lock side of single doors and one silencer for each leaf in heads of double door frames. Set lock strikes out to provide clearance for silencers.

2.6 FINISHES:

2.6.1 Factory-Primed Finish: Unless specified otherwise, phosphate treat and factory prime metal doors and frames as specifieo in SDI-100.

2.6.2 Hot-Dip Zinc-Coated and Factory-Primed Finish: Fabricate exterior doors and frames from galvanized steel, ASTM A526, coating designatin G60 or A60 (galvannealed). Repair damaged zinc-coated surfaces by the application of zinc dust paint conforming to Mil. Spec. DOD-P-21035. Phosphate treat and factory prime zinc-coated surfaces as specified in SDI-100.

2.6.3 Factory-Applied Enamel Finish: After factory priming, apply two coats of medium-gloss enamel to exposed surfaces. Separately bake or oven dry each coat. Drying time and temperature requirements shall be in accordancae with the coating manufacturer's recommendations. Color(s) of finish coat shall be as selected.

2.7 FABRICATION AND WORKMANSHIP: Finished doors and frames shall be strong and rigid, neat in appearance, and free from defects, waves, scratches, cuts, dents, ridges, holes, warp, and buckle. Molded members shall be clean cut, straight, and true, with joints coped or mitered, well formed, and in true alignment. Dress exposed welded and soldered joints smooth. Design door frame sections for use with the wall construction indicated. Corner joints shall be well formed and in true alignment. Conceal fastenings where practicable. All door frames in exterior walls shall be double-rabbeted design to receive screens or storm doors.

PART 3 - EXECUTION

3.1 INSTALLATION:

3.1.1 Hollow Metal Frames: Set frames accurately in position and plumb, align, and brace securely until permanent anchors are set. Anchor bottoms of frames securely to floors with expansion bolts or powder-actuated fasteners. Build-in or secure wall anchors to adjoining construction.

3.1.2 Hinged Doors: Calk metal-to-metal joints in exetrior framing members as specified in Section 07951, "SEALANTS AND CALKING," and remove excess calking. Hang doors in accordance with clearances specified in SDI-100. After erection and glazing, clean and adjust hardware.

3.1.3 Fire Doors and Frames: Install fire doors and frames, including hardware, in accordance with NFPA 80.

3.2 PROTECTION: Protect doors and frames from damage. Repair damaged doors and frames prior to completion and acceptance of the project or replace with new, as directed. Wire brush frames that have rusted until all rust is removed, clean thoroughly, and apply an all-over coat of rust-inhibitive paint of the same type used for shop coat.

3.3 CLEANING: Upon completion, clean exposed surfaces of doors and frames thoroughly. Remove all mastic smears and other unsightly marks.

END OF SECTION

SECTION 08210
WOOD DOORS

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U. S. DEPARTMENT OF COMMERCE PRODUCT STANDARD (USDC)(PS):

PS 32-70 Hinged Interior Wood Door Units

AMERICAN WOODWORK INSTITUTE (AWI):

Architectural Woodwork Quality Standard, Guide Specifications and Quality Certification Programs

FIR AND HEMLOCK DOOR ASSOCIATION (FHDA):

FHDA/6-77 Industry Standard for Douglas Fir, Western Hemlock, and Sitka Spruce Doors and Blinds

NATIONAL WOODWORK MANUFACTURERS ASSOCIATION (NWMA):

I.S.1-78 Industry Standard for Wood Flush Doors
I.S.4-70 Industry Standard for Water-Repellent Preservative Non-Pressure Treatment for Millwork
I.S.5-73 Industry Standard for Ponderosa Pine Doors

UNDERWRITERS' LABORATORIES, INC. (UL):

Building Materials Directory (1979)

1.2 SUBMITTALS:

1.2.1 Shop Drawings: Shop drawings, catalog cuts, or descriptive material showing each type of door unit shall be submitted before work is started. Drawings and cuts shall indicate sizes, thickness, construction, methods of assembly, sticking, and operating hardware as specified herein, and all other necessary information.

1.2.2 Samples of Doors: Prior to the delivery of wood doors, a sample section of each type of door which shows the stile, rail, veneer, and core construction shall be submitted.

1.2.3 Warranty: Furnish a warranty to the Contracting Officer. This warranty shall warrant all doors free of defects as set forth in the door manufacturer's standard door warranty.

1.3 DELIVERY AND STORAGE: Doors shall be delivered to the site in an undamaged condition and shall be protected against damage and dampness. They shall be stored under cover in a well-ventilated building and shall not be exposed to extreme changes of temperature and humidity. Defective or damaged doors shall be replaced.

1.4 GRADE MARKING AND LABELING: Each door shall be marked with a stamp, brand, or label in accordance with the requirements of the applicable referenced publication or standard.

1.5 FACTORY SEALING: Before shipment, the top and bottom edges of doors shall be sealed with spar varnish or other approved water-resistant sealer standard with the manufacturer.

PART 2 - PRODUCTS

2.1 INTERIOR DOORS shall be fabricated with either Type I or Type II glue bond. Prehung interior wood door units shall conform to PS 32. Interior flush wood doors shall have Type B core, Type I face, sound grade, conforming to AWI Architectural Woodwork Quality Standards, Section 1300.

2.2 PREFITTING: Doors shall be completely sized and machined at the factory by the door manufacturer. The work shall include sizing, bevelling edges, mortising, and drilling for all hardware and providing all necessary openings for glass and louvers. Provide the door manufacturer with the necessary hardware samples and frame and hardware schedules as necessary to coordinate the work.

2.3 PREFINISHING: Doors shall be finished at the factory by the door manufacturer. All edges, cutouts, trim, and wood accessories shall receive sealer and two coats of finish compatible with the door face finish, except as specified otherwise herein.

2.3.1 Interior doors shall be solid color film finish. Color and patterns shall be as selected. Solid color film finish shall consist of a two-ply laminate consisting of a 1/2-mil thick clear polyvinyl fluoride film bonded to an 8-mil thick pigmented, embossed polychloride film. The two-ply laminate shall be bonded to the high-density overlay by the roll lamination method under heat and pressure. Color shall be as indicated or, if not indicated, as selected.

PART 3 - EXECUTION

3.1 INSTALLATION: Doors shall be hung with a 1/16-inch minimum, 1/8-inch maximum, clearance at sides and top, and a 3/16-inch minimum, 1/4-inch maximum clearance over thresholds. Provide 3/8-inch minimum, 7/16-inch maximum, clearance at bottom where no threshold occurs.

END OF SECTION

SETION 08710
FINISH HARDWARE

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publictions are referred to in the text by basic designation only.

FEDERAL SPECIFICATION (Fed. Spec):

FF-H-111C Hardware, Builders'; Shelf and Miscellaneous

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

A156.1-1981 Butts and Hinges
A156.2-1976 Locks and Lock Trim
A156.3-1978 Exit Devices
A156.4-1980 Door Controls (Closers)
A156.6-1979 Architectural Door Trim

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA):

1301-1980 Materials and Finishes
Directory of Certified Products

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

80-1981 Standard for Fire Doors and Windows
101-1981 Life Safety Code

UNDERWRITERS' LABORATORIES, INC. (UL):

Building Materials Directory (1980)

1.2 SUBMITTALS

1.2.1 Hardware List and Catalog Cuts: Within 30 days after award of the contract and berore any builders' hardware is delivered to the job site, submit for approval a hardware list, in triplicate, listing each item of builders' hardware accompanied by manufacturers' catalog cuts for each different item of hardware. Submit hardware list in the following form:

Hardware Item	Reference Publication Type No.	Mfr. Name & Catalog No.	UL Mark (if fire rated & listed)	BHMA Finish Hardware Designation

1.2.2 Hardware Schedule: After approval of hardware list and before hardware is delivered to job site, submit for approval a hardware schedule in triplicte. Schedule shall include for each item quantities, manufacturer's catalog numbers, descriptive information and locatin and hardware set identification, corresponding reference publication type number to manufacturer's catalog number, size, finish, list of abbreviations, key control symbols indicating keying system, and UL mark (if fire-rated and listed).

1.2.3 Certified Test Reports: Submit concurently with the hardware list, certified test reports for all items listed under "Hardware Items" indicating that each item meets the standard listed for that item. A copy of the listing of proposed hardware items in the current applicable BHMA Directory of Certified Products may be submitted in lieu of test reports.

1.2.4 Keying System Submission: Before locks are delivered to job site, submit complete keying system to, and have approved by, the Contracting Officer. Provide locks specified to be master keyed with keying bitting charts which shall be submitted to and approved by the Contracting Officer prior to completion of the contract.

1.3 DELIVERY AND MARKING: Deliver items of hardware to job site in their original individual containers, complete with necessary appurtenances including scres, keys, and instructins. Mark each individual container with manufacturer's name and catalog number as they appear in hardware schedule.

PART 2 - PRODUCTS

2.1 HARDWARE MANUFACTURERS AND MODIFICATIONS: Provide, as far as practicable, locks of one lock manufacturer's make; hinges of one hinge manufacturer's make; and door closing devices of one door closing device manufacturer's make. Modifications to hardware that are necessry to conform to construction shown or specified shall be provided as required for the specified operative and functinal features.

2.2 HARDWARE ITEMS covered by ANSI or BHMA standards are speaified by BHMA designations. Items covered by Fedeal Specifications are specified by federal designations.

2.3 TEMPLATE HARDWARE: hardware to be applied to metal and to prefinished doors shall be made to template. Promptly furnish template information or templates to metal door and frame and prefinished door manufacturers in order to avoid delay in door and frame manufacturing. Effect proper coordination between manufacturers of different hardware items in order that each manufacturer may furnish templates which allow installatin of hardware without interference to installaton and operation of other hardware.

2.4 HARDWARE FOR LABELED FIRE DOORS AND EXIT DOORS: Hardware shall conform to requirements of NFPA 80 for labeled fire doors and to NFPA 101 for exit doors, as well as to other requirements specified. Labeling and listing by UL Building Materials Directory for class of door being used will be accepted as evidence of conformance to these requirements. Install minimum latch throw as specified on label of individual door. Provide hardware listed by UL except

where heavier materials, larger sizes, or better grades are specified herein under paragraph entitled "Hardware Sets." In lieu of UL labeling and listing, test reports from a nationally recognized testing agency may be submitted showing that hardware has been tested in accordance with UL test methods and that it conforms to NFPA requirements.

2.5 HARDWARE ITEMS: Quantities, metal finish, sizes, grades, functions, types, optional features (o.f.), and sizes of closers for specific openings shall be provided as specified herein under paragraph entitled "Hardware Sets."

2.5.1 Hinges shall conform to ANSI A156.1. Construct loose pin hinges for exterior doors and reverse-bevel interior doors so that pins will be nonremovable when door is closed. Hinges shall bear name or trademark of manufactuer. Provide types of hinges, sizes, finish, design options, and quantity per door for specific openings as specified herein under paragraph entitled "Hardware Sets."

2.5.2 Locks and Latches shall conform to ANSI A156.2. Locks shall have interchangeable type cylinders or removable cores which are removed and replaced by use of special control keys. Locks and latchsets of the same series shall be the product of the same manufacturer. Lock cylinders shall have not less than five pin tumblers. Provide trim for locks and latchsets of wrought construcgion and of commercial plain design. Legible mark on the lock and latches, where it can be seen after installation, the name of the manufacturer, or a trademark by which it can be readily identified.

2.5.3 Exit Devices and Auxiliary Items shall conformt o ANSI A156.3. Lock cylinders shall have not less than five pin tumbler cavities. Trim shall be of commercial plain design. Provide trim items with straight, beveled or smoothly rounded sides, corners, and edges. Legibly mark the name of the manufacturer, or a trademark by which it can be readily identified.

2.5.4 Door Closing Devices shall conform to ANSI A156.4.

2.5.4.1 Identification Marking: Clearly and permanently mark on the body, or on a nameplate securely attached to the body of the closer, the manufacturer's name or trademark, or other marking by which the source of manufacture can be readily identified. In addition, the manufacturer's size designatin shall be permanently marked or cast in the case, cover, arm, or cap, so as to be visible after installation, upon removal of cover or finish plates.

2.5.4.2 Special Tools: Provide special tools for adjustment of door closing devices, such as spanner or a socket wrench.

2.6 KEYING SYSTEM: Provide keyed cylinders to provide master keying system. Design system to provide highest possible security consistent with type of system being used. Pertinent keying requirements not specified herein shall be as directed. Provide keys as follows:

LOCK, GROUP OR SET OF LOCKS	QUANTITY OF KEYS
Each Cylinder Lock (except Keyed-alike Locks)	3
Each Master Keyed Set	5
Construction Master Keying System	8
Control Keys for Interchangeable Cylinders and Removable Core System	5

Provide change keys in individual envelopes for each cylinder delivered. Envelopes shall have respective door identification numbers. Stamp each change key with number and stamp set symbol, and stamp each master key with set symbol as applicable.

2.7 FASTENERS: Supply fasteners of roper type, quality, size, quantity, and finish with hardware. Supply fasteners exposed to weather of nonferrous metal or stainless steel and match finish of trim as closely as possible. Where hardware is of stainless steel, provide screws and fastenings also of stainless steel. use fasteners of type necessary to accomplish a permanent installation. Use full-threaded wood screws.

2.8 FINISHES shall conform to BHMA 1301. Hardware shall have BHMA 606 satin brass, unless specified otherwise herein, except surface type door closers which have aluminum prime coat finish.

PART 3 - EXECUTION

3.1 INSTALLATION OF HARDWARE: Install hardware following manufacturer's instructions. Except as indicated or specified otherwise, use fasteners furnished with hardware to fasten hardware in place. Fasten hardware to wood surfaces with full-threaded wood screws or sheet metal screws. Use machine screws set in expansion shields for fastening hardware to solid concrete and masonry surfaces. Use toggle bolts where required for fastening to hollow core construction. Use through bolts where indicated or specified and where necessry for satisfactory installation.

3.2 ACCEPTANCE: After installation, protect hardware from paint, stains, blemishes, and other damage until acceptance of work. Submit notice of operation testing 14 days before scheduled, so that the testing can be witnessed. Hinges, locks, latches, bolts, holders, closers, and other items shall be adjusted to operate properly. Also demonstrate that tagged keys operate respective locks. After hardware is checked, deliver tagged keys to Contracting Officer. Correct, repair, and finish, as directed, errors in cutting and fitting and damage to adjoining work.

3.3 LABELED DOORS: Install hardware for fire doors in accordance with NFPA 80 and exit doors in accordance with NFPA 101.

3.4 LOCATION OF HARDWARE ON HINGED DOORS: Locate as follows, unless indicated or specified otherwise herein:

a. Locks: Locate knobs so that center line of strike is 40-5/16 inches (nominal) above bottom of door frame.

b. Fire Exit (Panic) Devices: Locate so that center line of lock strike is 40-5/16 inches (nominal) above bottom of door frame. Where knob, pull, or pull with thumb piece is used as outside trim with panic devices, height of strike will determine position of outside trim.

c. Hinges: Locate as follows:

(1) Top Hinge: Not over 11-3/4 inches from inside of frame rabbet at head to center line of hinge

(2) Bottom Hinge: Not over 13 inches above bottom of door frame to center line of hinge

(3) Center Hinge: Midway between top and bottom hinges

3.5 DOOR SILENCERS: On hollow metal frames for single doors, locate silencers directly opposite hinges. On frames for double doors, locate silencers on head rabbet of door frame, approximately six inches each side of center line of door opening.

3.6 HARDWARE SETS: Each specified door shall have the following:

DOOR NO. 1: Each shall have:

2 closers	Type C02021 Size IV
1 intrusion device	Magnetic contact switch (see specification Section 11020)
1 security astragal	Type 378A (as manufactured by Pemko Company)

DOOR NO. 2: Each shall have:

1-1/2 pairs of hinges	Type A8111, NRP, 4-1/2 by 4-1/2 inches, BHMA 600
1 fire exit bolt combination	Type 3, Function 01
1 intrusion device	Magnetic contact switch (see specification Section 11020)
1 closer	Type C02021 Size IV
1 threshold	Type 833 (No. 179A as manufactured by Pemko Co.)
3 door silencers	Type L03011

DOOR NO. 8 shall have: manufacturer's standard hardware, hinges, mortise locks,etc., as required

DOORS NO. 14 and 16: Each shall have:

1 intrusion device	Magnetic contact switch (see specification Section 11020)

DOORS NO. 3, 5, 6, 7, 10, 12 and 15: Each shall have:

1-1/2 pairs of hinges	A8133, NRP, 4-1/2 by 4-1/2 inches, BHMA 600
1 lockset	Type Series 1000 Function F14
1 closer	Type C02021 Size III
1 electric strike	Type E09331
1 intrusion device	Magnetic contact switch (see specification Section 11020)

DOOR NO. 9: Each shall have:

2 closers	Type C02021 Size III
1 fire exit bolt combination	1 each Type 2, Function 01 and 1 each Type 3, Function 01
1 intrusion device	Magnetic contact switch (see specification Section 11020)

SECTION 09150
STUCCOING

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

C 144-76	Aggregate for Masonry Mortar
C 150-80	Portland Cement
C 206-79	Finishing Hydrated Lime

1.2 SUBMIT MANUFACTURER'S CERTIFICATES OF CONFORMANCE attesting that the materials meet the requirements specified.

1.3 DELIVERY AND STORAGE: Deliver manufactured materials in the manufacturer's original unbroken packages or containers which are labeled plainly with the manufacturers' names and brands. Keep cementitious materials dry and stored off the ground, under cover, and away from sweating walls and other damp surfaces until ready to be used.

1.4 ENVIRONMENTAL CONDITIONS: An ambient temperature of not less than 40 degrees Fahrenheit shall exist continuously where stuccoing work will be done. This temperature shall have existed continuously for not less than 48 hours prior to the application of stucco. Do not begin work until the U. S. Weather Service predicts the temperature will remain above 40 degrees Fahrenheit while the work is being done and during the curing operation.

PART 2 - PRODUCTS

2.1 MATERIALS: Provide materials conforming to the respective specifications and the requirements specified herein.

2.1.1 Portland Cement: ASTM C 150, gray Portland cement Type II.

2.1.2 Hydrated Lime: ASTM C 206, Type S

2.1.3 Sand Gradation for Basecoats shall conform to ASTM C 144 except for the following gradation:

	Percentage retained by weight (plus or minus 2% on each sieve)	
Sieve Size	Minimum	Maximum
No. 4		0
No. 8	10	10
No. 16	10	40
No. 30	30	65
No. 50	70	90
No. 100	95	100

2.1.4 Sand Gradation for Finish Coats: Sand for finish coat shall be natural color and shall be graded within the limits shown above for basecoats, except that all of the sand shall pass the No. 8 sieve, and for smooth finish all of the sand shall pass the No. 30 sieve.

2.2 PROPORTIONING AND MIXING: Except where specified otherwise, materials are specified on a volume basis and shall be measured in approved containers, which will insure that the specified proportions will be controlled and accurately maintained during the progress of the work. Measuring materials with shovels "shovel count" will not be permitted. Ready-mix stucco shall be prepared for use by the addition of water only.

2.2.1 Portland Cement-Lime Stucco Basecoats: Mix scratch coat in the proportion of one part by volume of Portland cement to not more than 3/4 part by volume of hydrated lime and not less than 2-1/2 nor more than 4 parts by volume of damp loose sand. Mix brown coat in the proportion of one part by volume of Portland cement to not more than 1/2 part by volume hydrated lime and not less than 3 nor more than 5 parts by volume of damp loose sand. Workability shall govern the actual amount of lime and sand used in the scratch and brown coats.

2.2.2 Portland Cement-Lime Stucco Finish Coat: Mix finish in the proportion of one part by volume of Portland cement to not more than one part by volume of hydrated lime, and not more than 4 parts by volume of damp loose sand. Workability shall govern the actual amount of lime and sand used in the finish coat, within the limits specified herein. Approved coloring compounds shall be added to produce the color to match existing. Prepared stucco finish containing not less than one-third Portland cement by weight may be provided, as approved.

2.3 MIXING: Mix materials in approved mechanical mixers of the type in which the quantity of water can be controlled accurately and uniformly, except that finish coats containing lime may be hand mixed. While the mixer is in continuous operation, add approximately 90 percent of th estimated quantity of water, half of the sand, all of the cementitious materials, and the other one-half of the sand shall be introduced into the mixer in that sequence and mix thoroughly with the remainder of the water until the mixture is uniform in color and consistency. Avoid excessive mixing or agitation. Discard stucco which has begun to set before it is used; retempering will not be permitted. Do not use frozen, caked, or lumped materials. Empty mixers and mixing boxes completely after each batch is mixed, and keep free of old plaster. Mix ready-mixed stucco in accordance with the manufacturer's printed instructions.

PART 3 - EXECUTION

3.1 PREPARATION OF SURFACES: Clean surfaces of all projections, dust, loose particles, grease, bond breakers, and other foreign matter. Do not apply stucco directly to (1) surfaces of masonry or concrete that have been coated with bituminous compound or other waterproofing agents, or (2) to surfaces that have been painted or previously plastered. Before stucco work is started, wet masonry surfaces thoroughly with a fine fog spray of clean water to produce a uniformly moist condition. Do not apply stucco to surfaces containing frost.

3.2 GENERAL: Stucco may be applied by hand or by machine. When a plastering machine is used the fluidity of Portland cement-lime stucco shall be controlled to have a slump of not more than 2-1/2 inches when tested using a 2- by 4- by 6-inch high slump cone. Subsequent to determining water content to meet this slump, do not add additional water to the mix. Conduct the slump test according to the following procedure:

(1) Place cone on level, dry, non-absorptive base plate.

(2) While holding cone firmly against base plate, fill cone with plaster taken directly from the hose or nozzle of the plastering machine, tamping with metal rod during filling to release air bubbles.

(3) Screed off plaster level with top of cone. Remove cone by lifting it straight up with a slow and smooth notion.

(4) Place cone in a vertical position adjacent to freed plaster sample, using care not to jiggle base plate.

(5) Lay a straightedge across top of cone, again being careful not to vibrate cone. Measure slump in inches from the bottom edge of the straightedge to the top of the slumped plaster sample.

3.3 PORTLAND CEMENT-LIME STUCCO: Apply base coats with sufficient pressure to provide good bond on masonry or concrete bases. Apply in three coats to a thickness of not less than 7/8 inch. Apply the scratch coat not less than 3/8 inch thick, lightly score horizontally, and moist cure for not less than 24 hours. Apply the brown coat after the scratch coat has been aged at least 24 hours in addition to the moist curing period. Apply the brown coat to bring the base coat out to the screeds, compact and straighten to a true surface with rod and darby, and float to receive the finish coat. After the brown coat has been moist cured for not less than 24 hours and aged at least an additional 5 days, apply the finish coat to a thickness of not less than 1/8 inch. Where any previous coat has become dry, dampen the surface evenly with water, prior to the application of the next coat. Finish coat for stucco shall be of the color and texture as adjoining existing stucco. Moist cure stucco for 24 hours using a fine fog spray of water and apply to the finish coat as frequently as required to prevent dry-out of the stucco. Do not stucco to the point where free water stands on the surface. Prevent staining of the finish coat.

END OF SECTION

SECTON 09250
GYPSUM WALLBOARD

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The following publications form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

C36-80	Gypsum Wallboard
C475-64(1970)	Joint Treatment Materials for Gypsum Wallboard Construction
C524-77	Nails for the Application of Gypsum Wallboard

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

A97.1-1965	Gypsum Wallboard Finishes

1.2 QUALITY CONTROL: Aprovals, except those required for field installations, field applications and field tests, shall be obtained before custom fabrication is started and before delivery of materials or equipment to the project site.

1.3 SUBMITTALS:

1.3.1 Samples of materials proposed for use shall be submitted to and approved by the Contracting Officer. The following samples shall be submitted:

a.	Wallboard	One square foot of each type
b.	Nails	Six of each type and size
c.	Screws	Six of each type and size
d.	Staples	Six of each type and size
e.	Joint treatment materials	Data
f.	Mouldings and metal trim	Six-inch section of each type

1.3.2 Certificates of Conformance or Compliannce: Before delivery of gypsum wallboard, notarized certificates, in triplicate, attesting that the wallboard and accessories meet the requirements specified shall be submitted to and approved by the Contracting Officer.

1.4 DELIVERY AND STORAGE: Wallboard and accessories shall be delivered to the site in original unopened containers, bundles and rolls, bearing manufacturer's name and brand. Materials shall be kept dry, preferably by being stored on level platforms inside the bulding under roof. When necessary to store materials outside, they shall be stacked off the ground, supported on level platforms, and fully protected from the weather, as approved.

PART 2 - PRODUCTS

2.1 WALLBOARD shall be 48 inches wide, 5/8-inch thick, with tapered edges, conforming to ASTM C36, or Grade R, Class 1 Form A, Style 3, conforming to SS-L-30.

2.2 NAILS for installation on wood studs shall be not less than one-inch long, conforming to ASTM C380 or C514, the type recommended by the wallboard manufacturer, as approved.

2.3 STAPLES for installation on wood studs shall not be lighter than 16 USS gage galvanized wire, flat, 7/16-inch outside width of crown with legs not less than 1-1/4 inch long with divergent points.

2.4 SCREWS for ceiling installation shall be gypsum drywall screws, not less than one-inch long of the type recommended by wallboard manufacturer, as approved.

2.5 JOINT TREATMENT MATERIAL shall conform to ASTM C475; water shall be potable.

2.6 CORNER BEADS shall be formed to an angle of 80 to 90 degrees and shall be either: (1) zinc-coated steel not lighter than 26 gage, with wings not less than 7/8-inch wide and perforated for nails and compound treatment, or (2) formed of zinc-coated steel or protected aluminum with legs approximately 1/2 to 3/4-inch wide and cemented under pressure with a non-soluable base adhesive to tough-paper jointing-tape wings not less than one-inch wide. Zinc-coated steel shall conform to QQ-S-775, Type 1, Class E.

2.7 MOUNDINGS AND METAL TRIM shall be the type recommended by wallboard manufacturer, as approved.

PART 3 - EXECUTION

3.1 APPLICATION: During application of wallboard, temperature within building shall be maintained at not less than 50 degrees Fahrenheit. Ventilation shall be provided as requrired to prevent moisture buildup. Wallboard shall be applied with reverse side against framing members, with panels in contact with each other but not forced into place. At corners, edges of panels shall be concealed by the overlapping of abutting panel edges. Panels shall be so staggered that the corners of any four panels will not meet at a common point except at vertical corners. Joints on opposite sides of partitions shall be so arranged as to occur on different framing members. End joints shall be supported over framing members. Wallboard shall be applied first to ceilings and then to walls. It shall be cut as necessary, by scoring and breaking or by sawing, working from the face side. When cutting by scoring, the face paper shall be cut with a knife or other approved tool; the wallboard shall then be snapped back from the cut face. The back paper may be broken by snapping the wallboard in the reverse direction, or the back paper may be cut. Cut edges and ends shall be smoothed where necessary to obtain neat jointing during erection. Cutouts for pipes, fixtures, and other openings shall be scored in outline before being knocked out or shall be cut out with a saw or other approved tool. Wallboard shall be held in firm contact with framing members while fasteners are being driven. Fasteners shall be spaced not less than 3/8-inch nor more than 1/2-inch from edges and ends of panels except as specified otherwise hereinafter. Nails shall not be staggered on adjoining edges and ends of panels. Screws shall be staggered on adjoining edges and ends of panels. Expansion joints shall be provided as recommended by wallboard manufacturer as approved.

3.1.1 Gypsum wallboard shall be installed in accordance with ASTM A97.1.

3.1.2 Single-Layer System of wallboard shall be provided as specified hereinafter. Wallboard shall be regular insulating (foil-backed) gypsum wallboard, as specified hereinbefore. For ceilings, wallboard shall be applied with long dimension at right angles to framing members. For wall, wallboard shall be applied with long dimension parallel angles to framing members. Fastening along horizontal angle formed by walls and ceiling shall begin not less than 8 inches from wall-ceiling intersection. At vertical angles formed by interseacting walls, corner fasteners shall be omitted in panel that is first applied and overlapped in the angle. Nails shall be driven home with heads slightly below surface of wallboard in a dimple formed by crowned face of driving tool striking last blow. Screws shall be power driven slightly below surface of wallboard.

3.1.2.1 Single-nailing application shall be provided as specified hereinafter. For walls, nailing shall begin at the top center of the panel and proceed outward to the edges or ends, with the top nailing completed before proceeding. Nailing in the field of the panel shall begin with the nailing member nearest the center of the panel and proceed outward to the edges or ends, with the nailing completed on each nailing member before proceeding to the next membaers. Nails shall be spaced a maximum of 8 inches on center along nailing members.

3.1.2.2 Screw application shall be provided as specified hereinafter. for ceilings, screwing shall begin at the center of the panel and proceed toward the edges or ends, with the screwing completed on each framing member before proceeding to the next member. Screwing shall be finished in the framing members on the same side of the center of the panel beafore screwing is commenced on the other side of the center of the panel. Screws may be placed on both sides of the center of the panel concurrently, providing two appliers are working on the panel. Screws shall be spaced a maximum of 12 inches on centers along framing members.

3.2 CALKING: Openings around pipes, fixtures, and other items projecting through wallboard shall be calked flush with waterproof, non-hardening calking compound as specified in Section entitled "CALKING".

3.3 JOINT TREATMENT shall be provided as specified hereinafter.

First Step: Joint compound shall be applied to the edges of the panels using moderate presure. Reinforcing tape shall be applied over the full length of the joint and embedded in the compound byusing moderate pressure. Excess compound shall be removed, after which the tape shall be given a thin coating of compound. End joints shall be filled with the compound and taped in a similar manner. The compound shall be sanded as necessary to remove high spots.

Second Step: After the first coating has dried, a second coating of joint compound shall be applied to the joints and shall be feathered out as far as necessary to obtain a smooth surface.

Third Step: After the second coating has dried, a third coating shall be applied very thinly to a smooth surface and feathered out 6 to 8 inches for tapered edge joints and 12 to 16 inches for cut (butt) end joints on both sides of the joint. The joint shall be sanded lightly when dry with 2/0 sandpaper to leave a smooth, flush surface. Care shall be taken not to scuff the paper surface of the wallboard when sandpapering the compound.

3.4 FASTENER-DEPRESSION TREATMENT: Panels shall fit tightly against the framing members before concealing the fastener depressions. The depressions shall be filled with at least three coatings of joint compound, and each coating shall be allowed to dry before the succeeding coating is applied. The last coating shall be sanded lightly with 2/0 sandpaper to leave a smooth finish flush with the paper face of the wallboard.

3.5 CORNER TREATMENT: External corners shall have a corner bead fitted neatly over the corner and secured with the same type fasteners used for applying walboard. The fasteners shall be spaced approximately 6 inches on center and driven through the wallboard into the framing member. After the cornerpiece has been secured in place, the corner shall be treated with not less than 2 coats of joint compound in the manner specified hereinbefore for joints. The joint compound shall be feathered out from 8 to 10 inches on both sides of the corner.

3.6 METAL TRIM shall be provided at intersections where wallboard abuts other materials.

3.7 PATCHING: Surface defects and damage shall be corrected as required to leave wallboard smooth, uniform in appearance, and ready to receive finish as specified.

END OF SECTION

SECTION 09650
VINYL-ASBESTOS TILE

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

FEDERAL SPECIFICATIONS (Fed. Spec.):

P-W-155C	Wax, Floor, Water-Emulsion, Slip Resistant
SS-A-701B	Asphalt Primer for Roofing and Waterproofing
SS-T-312A & Am 1	Tile, Floor; Ashalt, Rubber, Vinyl, Vinyl-Asbestos
SS-W-40A	Wallbase, Rubber and Vinyl-Plastic
MMM-A-110B & Am 2	Adhesive, Asphalt, Cut-Back Type (for Asphalt and Vinyl-Asbestos Tiles
MMM-A-115B	Adhesive, Asphalt, Water Emulsion Type (for Asphalt and Vinyl-Asbestos Tile

1.2. APROVALS: Except those required for field installations, field applications, and field tests, aprovals shall be obtained before delivery of materials or equipment to the project site.

1.3 TESTS AND TEST REPORTS: The testing requirements incorporated in referenced documents will be waived provided the manufacturer submits notarzed certificates that previously manufactured materials have been tested by recognized laboratories, that such materials meet testing requirement specified and that tested materials are of the same quality, manufacture and make as that furnished for this project. Copies of the test reports need not be submitted except as specifically requested by the Contracting Officer.

1.4 SUBMITTALS:

1.4.1 Samples: One sample of flooring materials shall be submitted for approval before the work is started.

1.4.2 Selection of Colors and Patterns: Tile chips shall be submitted to the Contracting Officer for selection of color and patterns.

1.5 ENVIRONMENTAL CONDITONS: Spaces in which flooring work is to be performed shall be maintained between 70 and 90 degrees Fahrenheit at the floor level for at least 48 hours prior to starting the work, during the time work is performed, and for at least 48 hours after the work is completed. A minimum temperature of 55 degrees Fahrenheit shall be maintained thereafter. Adequate ventilation shall be provided to remove moisture and fumes from the area.

PART 2 - PRODUCTS

2.1 MATERIALS: Accessories shall be the approved standard products of the manufacturer of the flooring. The color and pattern of tile shall be uniformly distributed throughout the thickness of the tile. Variations in

in shades and off-pattern matches between containers will not be acceptable. Flooring in any one continuous area shall be from the same lot and shall have the same shade and pattern. All materials specified to be of a type as recommended by the manufacturer shall be subject to approval.

2.1.1 Vinyl-Asbestos Tile shall conform to SS-T-312, Type IV, and shall be size, thickness and color to match existing adjacent thickness.

2.1.2 Primer shall be cut-back type conforming to SS-A-701.

2.1.3 Adhesive for vinyl-asbestos tile shall conform to MMM-A-110 and MMM-A-115.

2.1.4 Polish shall conform to P-W-155.

2.1.5 Wallbase shall conform to SS-W-40, rubber type.

PART 3 - EXECUTION

3.1 INSTALLATION:

3.1.1 Condition of Surfaces: Floor surfaces to receive flooring shall be clean, thoroughly dry, smooth, firm and sound; and they shall be free from springiness, oil, paint, wax, dirt, curing compounds, or any other damaging material.

3.1.2 Preparation of Surfaces: All ridges or other uneven surfaces shall be ground smooth. Cracks 1/16-inch or wider shall be cut out and filled with a crack filler as specified for this application. Latex underlayment shall be provided to fill the remaining holes, cracks, and depressions, and for smoothing, leveling, or feather edging the concrete. Chalky or dusty surfaces shall be primed with an approved primer, recommended by the flooring manufacturer, after cleaning and removal of all loose particles.

3.2 APPLICATION: Installation shall be deferred until all other work that might cause damage to the flooring has been completed.

3.3 CLEANING: Immediately upon completion of the installation in a room or area, flooring and adjacent surfaces shall be dry-cleaned with an approved cleaner to remove surplus adhesive. No sooner than five days after installation, flooring shall be washed with an approved non-alkaline cleaning solution, rinsed thoroughly with clear cold water, and given two coats of polish.

3.4 PROTECTION: From the time of laying until acceptance, flooring shall be protected from damage. Defects which develop, sush as damaged, loose, broken, or curled tiles, shall be removed and replaced at the expense of the Contractor.

END OF SECTION

SECTION 09920
INTERIOR PAINTING

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

FEDERAL SPECIFICATIONS (Fed. Spec.):

TT-E-489F	Enamel, Alkyd, Gloss, for Exterior and Interior
TT-E-529C	Enamel, Alkyd, Semigloss
TT-E-543A & Am 1	Enamel, Interior, Underciat, Tints and White
TT-P-29J & Am 1	Paint, Latex Base, Interior, Flat, White and Tints
TT-P-30E	Paint, Alkyd, Odorless, Interior, Flat, White and Tints
TT-P-641F	Primer, Paint, Zinc Dust-Zinc Oxide (for Galvanized Surfaces)
TT-P-645	Primer, Zinc-Chromate, Alkyd Type
TT-P-650C	Primer Coating, Latex Base, Interionr
TT-V-51F	Varnish, Asphalt

MILITARY SPECIFICTIONS (Mil. Spec.):

MIL-P-14504B	Primer, Coating, Pretreatment, One-Package Wash Primer (for Steel, Aluminum, and Magnesium)
MIL-P-15328C & Am 1	Primer (Wash), Pretreatment Blue (Formula No. 117-B for Metals)

1.2 PREPARATION OF SURFACES: All dirt, rust, scale, splinters, loose particles, disintegrated paint, grease, oil, and other deleterious substances shall be removed from all surfaces that are to be painted or otherwise finished. Putty and calking compounds shall be allowed to set one week before painting.

1.2.1 Masonry surfaces shall be repaired before painting. Surfaces to be painted shall be clean and free from dirt, fungus, grease, oil, efflorescence, asphalt, tar and other foreign substances. Mortar droppings, glaze and scale, shall be removed before applicaton of paint.

1.2.2 Plaster and drywall surfaces shall be dry, clean, and free from grit, loose plaster, and surface irregularities before paint is applied.

1.2.3 Cloth coverings on interior insulation shall be given two coats of non-penetrating sizing compound, to which the fungicide has been added, before any paint is applied.

1.2.4 Metal surfaces to be painted, including aluminum, brass, copper and zinc-coated surfaces and unprimed steel and iron surfaces, except surfaces subject to temperatures in excess of 350 degrees Fahrenheit, immediately after being cleaned shall be given one coat of pretreatment coating conforming to

the paragraph entitled "PAINTING SCHEDULE" hereinafter. Zinc-coated surfaces to be painted shall be cleaned with mineral spirits and wiped dry with clean, dry cloths prior to application of pretreatment coating. Aluminum surfaces to be painted shall be solvent cleaned prior to application of pretreatment coating. Primer coat shall be applied over the pretreatment coating as soon as practicable after the coating has dried.

1.2.5 Ferrous surfaces to be painted shall be solvent cleaned to remove oil and grease, and mechanically cleaned by powered wire brushing or surface blasting to remove rust, mill scale, and other foreign substances. Minor amounts of residual rust that cannot be removed except by thorough blast cleaning will be allowed to remain. Primer paint shall be applied as soon as practicable after cleaning.

1.2.6 APPROVAL OF MATERIALS: No paint or other coating shall be applied before required test reports, certificates, and requests for substitutions have been submitted and the respective material approved for use on this project. All requests for substitutions shall be submitted to the Contracting Officer for approval. Each such request shall include specific identification of the proposed substitute, justification for the necessity of the substitution, certified test reports of the proposed substitute, including all tests required by the specification for the substituted material, and a tabulation of the specified material compared to the proposed substitute. The tabulation shall include all tests, composition of both pigment and vehicle, and quantitative and qualitative requirements required for both the specified and the proposed material. Any deviations from specified requirements shall be clearly indicated. Any paints or other coatings that are applied before the paints or coatings are approved are subject to disapproval and, if so disapproved, shall be completely removed and surfaces restored to a condition suitable for specified paints or coating.

1.3 SAMPLING AND TESTING of paint as specified herein shall be provided whenever the required quantity of any one type of coating exceed 50 gallons. Paints proposed for use shall be sampled from material delivered to the job site and tested by a recognized, independent testing laboratory approved by the Contracting Officer, at the Contractor's expense. Paint propsed for use shall be stored on the project site in sealed and labeled containers, sufficiently in advance of need to allow a minimum of 30 days for testing. Upon notification by the Contractor that the material is at the site, a one-quart sample of each batch shall be obtained by random selection from the sealed containers by the Contracting Officer. Adequate mixing prior to sampling shall be accomplished to insure a uniform representative sample. A batch is defined as that quantity of material processed at one time and identified by a number, intended use, and quantity involved. Testing shall include all tests specified in the standard specification for the paint and all requirements specified herein, specifically including composition of both pigment and vehicle, and quantitative and qualitative requirements for mixed paint. Other samples will be taken from paints being used on the job and tested by the Government.

1.3.1 Tests and Certificates: When the quantity required is less than 50 gallons, the Contractor shall submit notarized certificates from the manufacturer stating that previously manufactured materials have been tested by recognized laboratories, that such materials meet testing requirements in referenced specifications and that the material furnished for this project is of the same type, quality, manufacture, and make as that tested. Copies of the test reports need not be submitted except as specifically requested by the Contracting Officer.

1.3.1.1 Sample Certificate: The notarized certificate shall not contain statements that could be intepreted to imply that the product does not meet all requirements specified, such as "as good as", "achieve the same end use and results as materials formulated in accordance with the reference specification", "equal or exceed the service and performance of the specified material". The certificate should simply state that the product conforms to all requirements specified.

SAMPLE CERTIFICATE

The manufacturer hereby certifies that previously manufactured materials have been tested by recognized laboratories, that such materials meet the requirements specified, that the materials being furnished for this project are of the same type, quality, manufacture, and make as those tested, and that the materials conform to all requirements of the respective reference specifications:

MANUFACTURER AND PRODUCT	REFERENCE SPECIFICATION
John Doe Company	
Exterior Enamel No. 5	TT-E-489F
Enamel, Alkyd, Semigloss	TT-E-529

_____
Signature and Title

_____
Notary Statement and Seal

PART 2 - PRODUCTS

2.1 PRODUCTS shall conform to the Painting Schedule specified hereinafter.

PART 3 - EXECUTION:

3.1 PAINT, ENAMEL AND VARNISH FINISH shall be applied carefully with good clean brushes or approved rollers. The work shall be so conducted as to avoid damage of other surfaces and public and private property in the area. Any damage thereto shall be made good by the Contractor at his expense. Sufficient time shall be allowed between coats to assure thorough drying, and each coat shall be in proper condition before the next coat is applied. Sanding and dusting, as necessary to produce finishes free of visible defects when viewed from a distance of five feet, shall be performed. The first coat on plaster and gypsum wallboard shall include such repeated touching-up of

suction spots of overall application of primer as necessary to produce a uniform color and gloss. The finished surfaces shall be free from runs, drops, ridges, sags, waves, laps, brush marks, and variations in colors. Each coat of paint shall be of sufficient thickness to cover completely the previous coat or surface. Interior paint may be applied at any time provided the surfaces to be painted are dry and the temperature can be kept between 45 and 95 degrees Fahrenheit during the application of enamels and varnishes. Paint shall not be applied when the surfaces are not in proper condition for painting.

3.2 SURFACES TO BE PAINTED: Existing surfaces damaged by the Contractor's operations and any other surfaces indicated shall be painted, except those surfaces listed under "SURFACES NOT TO BE PAINTED".

3.3. SURFACES NOT TO BE PAINTED:

a. Stainless steel surface
b. Prefinished items
c. Bituminous coated surfaces
d. Glazing
e. Ceramic or vitreous surfaces
f. Zinc-coated or copper pipe under insulation
g. Zinc-coated duct in unpainted areas
h. Toilet fixtures
i. Brick or concrete, unless previously painted

3.4 COLORS shall match existing adjacent surfaces unless otherwise indicated.

3.5 Painting Schedule:

SURFACE	PAINT AND MINIMUM THICKNESS IN MILS PER COAT				
	Pretreatment	Flat Finish Primer	Two Finish Coats *	Semi-Gloss Finish Primer	Two Finish Coats
Interior Surfaces:					
a. Concrete, concrete masonry	TT-F-1098	------	TT-P-30(1.0 mil)	TT-E-543	TT-E-529(1.2 mil)
b. Gypsum board or plaster except showers & toilets & ceilings	---------	TT-P-650	TT-P-30(1.0 mil)	TT-P-650	TT-E-529(1.2 mil)
c. Showers & toilets, metal, wood, concrete, plaster, except ceilings	---------	--------	----------	TT-E-543	TT-E-529(1.2 mil)
d. Metal, new, not shop-primed, not zinc-coated (except pipe & duct)	MIL-P-15328 or MIL-P-14504	--------	----------	TT-E-645 (1.0 mil)	TT-E-489(1.5 mil)
e. Existing metal which has been previously painted	----------	--------	----------	---------	TT-E-489(1.5 mil)
f. Metal, not shop-primed, zinc-coated (except pipe & duct)	----------	TT-P-641 Type II	TT-P-30(1.0 mil)	TT-P-641 (1.0 mil)	----------
g. Metal, shop-primed	SHOP PRIME DAMAGED AREAS TO MATCH EXISTING ADJACENT SURFACES				
h. Cloth covering of exposed interior insulation	Glue sizing	--------	TT-P-30(1.0 mil)	TT-E-543	TT-E-529(1.2 mil)
i. Steel pipe or structural steel with rust showing (APPLY AFTER CLEANING TO BARE METAL)	MIL-P-15328 (0.3 to 0.5 mil)	TT-P-645 (1.0 mil)	TT-P-30(1.5 mil)	TT-P-645 (1.0 mil)	TT-E-529(1.2 mil)
j. Wood	----------	---------	----------	TT-E-543	TT-E-529(1.2 mil)

*Use two finish coats unless primer is used in lieu of one finish coat.

			One Finish Coat		
k. Piping system, not zinc-coated, in unpainted areas	----------	---------	TT-V-51(1.6 mil)	---------	----------
l. Concrete, gypsum board or plaster ceilings except showers and toilets	----------	---------	TT-P-29(1.0 mil)	---------	----------
m. Acoustical Ceilings	----------	---------	TT-P-29 (0.7 mil)	---------	----------
n. Wood, natural finish				TT-V-119 (1.0 mil)	TT-V-119 (1.0 mil)

SECTION 10601
WIRE MESH PARTITIONS

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publictions are referred to in the specification by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

A36-77 Structural Steel

AMERICAN IRON AND STEEL INSTITUTE (AISI):

Cold-Formed Steel Design Manual, 1968 Edition and Addendum 2 (February 1977)

1.2 SUBMITTALS:

1.2.1 Catalog Data: Submit complete descriptive literature for each type of partition and window. Data shall be clearly marked to indicate which type, size, model, or item the Contractor intends to provide. Data shall be sufficient to show conformance to specified requirements.

1.2.2 Shop Drawings: Submit complete shop drawings for partitions. Show layout, details, materials, dimensions, finishes, and all information necessary for fabrication and installation.

1.3 DELIVERY AND STORAGE: Deliver materials in manufacturer's original, unopened containers or packaging with labels intact and legible. Deliver, store, and handle materials so as to prevent damage. Replacea defective or damaged materials with new.

1.4 DESCRIPTION OF WORK: Wire mesh partitions shall be normal duty for normal industrial use and shall be provided complte with all fasteners, capping bars, adjustable floor sockets, bracing, doors, service windows, hardware, and other items for a complete, useable, and rigid installation.

PART 2 - PRODUCTS

2.1 MATERIALS shall conform to the specifications listed and the requirements specified herein.

2.1.1 Steel Shapes, Plates, and Bars: ASTM A36

2.1.2 Cold-Formed Steel: AISI Cold-formed Steel Design Manual

2.1.3 Wire Mesh: Carbon steel wire, woven diamond mesh, intermediate crimped

2.1.4 Floor Sockets: Cast or forged steel or ductile iron, adjustable, approximately 2-1/2 inches high

2.1.5 Normal Duty Partitions:

2.1.5.1 Wire Mesh: 10 gage wire, 1-1/2 inch mesh

2.1.5.2 Vertical Frames: 1-1/4 inch by 5/8 inch cold-rolled C section channels or 1-1/4 inch by 1/2 inch by 1/8 inch channels.

2.1.5.3 Horizontal Frames: One-inch by 1/2 inch by 1/8 inch channels

2.1.5.4 Capping Bar: 2-1/4 inch by one-inch by 1/8 inch channel or 2-inch by 1/4 inch flat bar

2.1.5.5 Line Posts: Partitions shall be provided with flat bar line posts bolted between vertical frames. Sizes of posts shall be 1-3/4 inch by 5/16 inch or 2-inch by 1/4 inch.

2.1.6 Service Windows shall be mounted in standard mesh panel reinforced with channel tracks. Opening shall be 24 inches wide by 15 inches high unless otherwise indicated. Provide two spring-loaded latches, operable only from the inside, to lock window in open and closed positions. Shelf shall be formed of 12 gage sheet steel, 12 inches deep by 25 inches wide, unless otherwise indicated.

2.2 FABRICATION:

2.2.1 Standard Panels: Wire shall be woven into diamond mesh, intermediate crimped, and securely clinched to frames. All joints shall be mortised and tenoned. Wire shall be continuous at center reinforcing bars, either woven through a single channel or bolted between two channels. Panel vertical frames shall have 3/8-inch bolt holes 18 inches on center for heavy duty partitions.

2.2.2 Service Windows: Construction shall be similar to that specified for panels. Wire mesh shall be the same as that used in the adjacent partition panels.

2.2.3 Finish: All ferrous metal shall be thoroughly cleaned, phosphatized, and painted with enamel in the shop.

PART 3 - EXECUTION

3.1 INSTALLATION:

3.1.1 Wire Mesh Partitions: Install plumb, level, and true to line, within a tolerance of 1/8-inch in the height and in the run of the partition. Anchor floor sockets to the floor with expansion bolts. Vertical frames and posts shall be bolted together with 3/8-inch bolts 118 inches on center. To frames shall be secured to a continuous capping bar with 1/4-inch diametger U bolts not more than 28 inches on center.

3.1.2 Service Windows: Install in accordance wth manufacturers' recommendations. Adjust as required so that windows and hardware operate freely and properly.

3.1.3 Touch-up: All scratches, abrasions, and other damage to shop-painted surfaces shall be cleaned and painted to match the shop-applied finish.

END OF SECTION

SECTION 11020
PHYSICAL SECURITY SYSTEM

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U. S. DEPARTMENT OF DEFENSE (DOD):

Defense Acquisition Regulations (DAR)

MILITARY STANDARD (Mil. Std.):

MIL-STD-461 Electronic Interference Characteristics Requirements for Equipment

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

C2-81 National Electrical Safety Code
C80.3-77 Specifications for Electrical Metallic Tubing - Zinc Coated
X3.64-79 National Standard Code for Information Interchange (ASCII)

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC. (IEEE):

472-74 IEEE Guide for Surge Withstand Capability (SWC) Tests

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA):

ICS-1978 Industrial Controls and Sensors
250-1979 Enclosures for Electrical Equipment (1000 Volts Maximum)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

70-81 National Electrical Code

UNDERWRITERS' LABORATORIES, INC. (UL):

514-1980 Outlet Boxes and Fittings

RURAL ELECTRIFICATION ADMINISTRATION (REA):

PE20 Plastic Insulated Plastic Jacketed Station Wire

1.2 SYSTEM DESCRIPTION:

1.2.1 General: Configure the physical security system as described and shown. The physical security system shall function as access control and monitoring system. Individually coded key shall be reasonably flexible, two inch by three-inch (approximately) encoded card. Card reading sensor shall detect the encoded card when the card is held within four inches of the card reading sensor. Each individually encoded card shall identify the card holder by a unique alpha-numeric number. The system shall provide access control and monitoring of 16 doors.

1.2.1.1 An integrated access control and alarm monitoring system shall be provided. The system shall be modular physically and electronically.

1.2.1.2 The installed system shall be under complete control of the Government who shall be able to perform system controls as desired without the services of the Contractor or manufacturer. The following is a list of minimum acceptable user-initiated management functions:

- Add keys to memory with ability to define where and when the keyholder may use the key
- Group load keys with the same access control privileges with a minimum of keystrokes
- Delete from memory
- Modify access control privileges of individual keys
- Define certain keys as "night" keys--allowing access to "night" sensors when the alarm system is in the "night" mode
- Define the system confirguation data; i.e., which doors are active, IN and OUT doors, relationship of doors and contact points, etc.
- Define which door(s) will have request-to-exit (alarm shunt) implemented
- Select card controlled areas that are to operate in an anti-passback mode
- Manually unlock locks from the central console
- Define up to 32 access levels (groups of doors)
- Define up to 8 time codes (when keyholder may use doors)
- Define up to 25 holidays
- Define which sensors are "night" mode sensors
- Select card controlled areas that will generate an alert message when keycodes selected for trace are used
- Obtain hard copy listings of keycodes by any combinatin of access level, time period, location (In or Out), and trace status
- Obtain hard copy listings of the access level definitions
- Obtain hard copy listings of the time period definitions
- Define passcodes for operator entry into system command mode

Obtain hard copy report of current system status

Select access and monitor point activity messages that are out-put to the system printer(s) and datalogger

Selection shall be by selected combinations of activity category and event location

Determine if valid access reporting is required only at certain hours of the day and week for selected sensors

Acknowledge alarm conditions

Store and load system data base on a non-volatile (tape) recording medium

Load system program from a non-volatile (tape) recording medium

Select which monitor points are to be monitored at all times and which require external enabling (night mode)

Select which door(s) and monitor point(s) will actuate output contact(s)

Select which monitor points are to generate an alarm and which are to report for information purposes only

Define, on a point-by-point basis, the reporting of activation of the contact point as "Fire", "Perimeter", "Interior Duress", "Mehanical", "Hazard", or one of nine numerical types

Select card controlled areas that are to be monitored for "Intrusion" and "Door Held Open" alarms, and whether such alarms will be generated at all times or only when system is in "night" mode

1.2.1.3 Operating Status Display: When the system operator is not performing control functions, the central console shall display status on the system display. The following list is the minimum system data to be included:

Time of day

Current alarm locations by zone

If an unacknowledged alarm has occurred

Console power status

Tape status

Anti-passback status

Condition of each remote proximity card reader controller

1.2.1.4 All system activity messages to the operator shall be printed in plain language English text. Mnemonic type, or transaction-code type operator messages are not acceptable.

1.2.1.5 All operator commands shall be accomplished by selecting from a flip chart directory. Command descriptions in the directory shall be such that an operator will generally not require an instruction manual to execute authorized system commands. However, a complete operators manual shall also be supplied.

1.2.1.6 The system shall utilize passcodes. A passcode must be used by an operator to gain access to system commands. Each passcode shall be assigned to one of eight command levels. A command level is a set, or sub-set, of all system commands. It shall be possible to define up to 16 passcodes.

1.2.1.7 All central console equipment necessary for full system operation shall be provided as part of the initial installation. In addition, system expansion to a total of 16 sensors shall not require change or modification to existing proximity card readers controllers nor require replacement of any part of the basic system.

1.2.1.8 All remote equipment as necessary for access control of areas and monitoring of 16 access points, 16 request-to-exist locations, and 16 general purpose monitor points shall be provided.

1.2.1.9 All data transmission for access control and alarm functions to and from central to remote controllers shall be asynchronous serial, full duplex ASCII encoded digital data. The central equipment and remote controllers shall be compatible with either direct cable (20 ma current loop) or common carrier (RS232C) data communication facilities.

1.2.1.10 The data transmission system shall be continuously active, thus providing positive supervision of data transmission. Any interruption of transmission shall be detected, recorded on a printer, and shown on the system display.

1.2.1.11 System response time from a random command key presentation at any proximity card reader to activation of the corresponding access control device shall not exceed 2.5 seconds. Worst case system response time from simultaneous command key presentations at all system proximity card readers (16) to activation of the last access control device shall not exceed ten seconds.

1.2.2 Central Console shall consist of:

Central processor with integral printer, cassette tape for program and data base storage, display and operators keyboard

Battery backup for a 5 hours minimum

1.2.1 The central processer shall be a microcomputer. It shall contain the data base memory with capacity for up to 2000 keys and shall be programmed to handle access control decision making for one or two proximity card reader controllers, alarm reporting on card controlled areas, reporting (alarm or non-alarm) of monitor points not related to card access controlled areas, and communication with the operator. It shall run in one of two operator selected modes:

1. Monitor Mode - in which system status is presented as an easily understood display that is updated once each second. The central processor prepares system activity output messages for output to the printer. The operator shall be able to select which type of messages will be printed. The following is a minimum acceptable list of the message category types:

   MONITOR POINT (ALARM OR NON-ALARM) ACTIVITY
   VALID ACCESS (TRACE OR NON-TRACE) ACTIVITY
   INVALID ACCESS ACTIVITY
   KEY TRACE ACTIVITY
   SYSTEM FAULTS
   OPERATOR ACTIVITY
   DATA BASE UPDATES

All messages shall have a similar format which includes the following as minimum information:

Discrete line numbers
Time of activity
English text event description
Text and numeric data that identifies the location/operator/command key code, etc. of the event
A two-character message descriptor which can be used for off-line data processing

2. Command Mode - in which operator commands are entered in a conversational style using a flip chart, 20-character visual display, and/or self-explanatory keyboard entry requests. There shall be eight operator security levels. The highest level shall include all commands. The lowest level shall allow system monitoring and alarm acknowledging only. The levels between the lowest and highest shall provide access to different combinations of commands. Access to command levels requires the operator to enter a secret passcode to the keyboard. Only the highest level operator may define passcodes. Each of 16 passcodes is assigned to one of the eight operator security levels. Passcodes shall not be displayed except when being defined or modified. The central processor shall use passcodes to print the number of the operator executing system command

1.2.2 Remote equipment shall consist of:

Card reading sensors

Appropriate DC or AC power source for electrified locking hardware

Contact monitor modules (including door monitoring request-to-exit)

Battery standby system

1.2.3 The card reading sensor shall be a sealed solid state unit via coaxial cable as specified by the manufacturer. It shall detect the coded information in encoded card and send the information for processing. All required power shall come via the coaxial cable. As a minimum, it shall detect encoded cards when a card is within four inches of its surface.

1.2.3.1 The sensor design shall be such that it shall operate behind non-metallic surfaces.

1.2.3.2 Any sensor may be used in a normal mode, failsoft (degraded) mode, or anti-passback mode without requiring any changes to the reader. The sensors shall be designed to operate properly within the temperature range of minus 50 degrees Fahrenheit to plus 180 degrees Fahreneheit and within a relative humidity range of zero percent to 100 percent. No special housing nor treatment shall be required for outdoor use. Unit shall be water and vandal resistant.

1.2.3.3 Physical damage, including breaking open of the sensor housing, shall not allow a perpetrator access to any circuitry which would allow the system to be compromised. Likewise, transmission of any frequency, or set of frequencies, into the sensor at any power level shall not compromise the system. Additionally, presentation of an invalid set of frequencies, such as would occur if a perpetrator were attempting to "pick" the system, shall temporarily disable the sensor, thus eliminating the possibility of "sweeping' the system and finding a valid combination.

1.2.4 Power Line Surge Protection: Protect all equipment power supplies from power line surges. Equipment shall meet the spike susceptibility requirements of MIL-STD-461 Part 7, CS06. Provide protection near equipment in a separate metallic enclosure at ground potential and as necessary at the power panel to insure protection against surges.

1.2.5 Communication Links Surge Protection: Protect all communications equipment against surges induced on any communications link. All cables and conductors which serve as communications links shall have surge protection circuits installed at each end that meet the IEEE Standard 472 surge withstand capability test.

1.2.6 Sensor and Control Wiring Surge Protection: Protect all equipment against surges induced on control or sensor wiring installed outdoors above ground. Meet the IEEE Standard 472 surge withstand capability test. Provide protection near equipment in a separate metallic enclosure at ground potential.

1.2.7 Communication Links Overvoltage Protection: Protect all communications equipment against overvoltage on any communications link. All cables and conductors, which serve as communications links, shall have overvoltage protection of 480 Vac rms installed.

1.3 SUBMITTALS:

1.3.1 Shop Drawings: Shop drawings shall be submitted in accordance with the General Provisions and shall consist of a complete list of equipment and materials, including manufacturer's descriptive and technical literature, catalog cuts, and installation instructions. Shop drawings shall also contain complete wiring, routing, and schematic diagrams, software descriptions, calculations, and any other details required to demonstrate that the system has been coordinated and will properly function as a system. Drawings shall show proposed layout and installation of all equipment and appurtenances, and equipment relationship to other parts of the work including clearances for maintenance and operation.

1.3.2 Testing Submittals:

1.3.2.1 General: Provide a test plan and a test procedure for the operational acceptance tests for approval. Explain and detail, step by step, the expected results for demonstrating the requirements of this specification. Deliver test plan and test procedures and reports documents to the Contracting Officer 60 and 30 days, respectively, prior to the operational acceptance test.

1.3.2.2 Test Plan: The test plan shall define all the tests required to ensure that the system meets technical, operational, and performance specifications. The test plan shall define milestones for the test exercises, including simulation programs, equipment, personnel, and facilities required. The test plan shall identify the capabilities and functions to be tested, including the values or situations that will comprise the test.

1.3.2.3 Test Procedures and Reports: Develop test procedures from the test plan and design documents. The procedures shall consist of detailed instructions for test set up, execution, and evaluation of test results. The test reports shall document the results of the tests. Reports shall be delivered to the Contracting Officer within seven days after completion of each test.

1.3.3 Training Documentation: Submit lesson plans for the training phases, including type of training to be provided, with a list of reference material.

1.3.4 Operation and Maintenance Manuals: Provide three copies of each manual bound in hardback, loose-leaf binders, to the Contracting Officer after acceptance. Identify each manual's contents on the cover. The manuals shall include the names, addresses, and telephone numbers of each subcontractor installing equipment and systems and of the nearest service representatives for each item of equipment and each system. The manuals shall have a table of contents and tab sheets. Place the tab sheets at the beginning of each chapter or section and at the beginning of each appendix. Update all manuals to include modifications made during installation, checkout, and acceptance. Manuals provided shall include:

a. Functional Design Manual

b. Operation Manual

c. Maintenance Manual

1.3.4.1 Functional Design Manual: The functional design manual shall identify the operational requirements for the system and explain the theory of operations, design philosophy, and specific functions. Hardware and software functions, interfaces, and requirements shall be provided for all system operating modes.

1.3.4.2 Operation Manual: The operation manual shall provide instructions for operation of the system, including:

a. System start-up procedures

b. Use of system

c. Alarm presentaton

d. Failure and recovery procedures

e. Preventive maintenance schedule

f. Parameter schedules and sequence definition

g. System access requirements

1.3.4.3 Maintenance Manual: The maintenance manual shall provide descriptions of maintenance for all equipment, including inspection, periodic preventive maintenance, fault diagnosis, and repair or replacement of defective components, including:

a. General descriptions and specifications

b. Installation and checkout procedures

c. Electrical schematics and layout drawings

d. Alignment and calibration procedures

e. Manufacturer's repair parts list indicating sources of supply. Include Federal Stock Number (FSN) where normally provided.

f. Interface definition

g. Signal identification and timing diagrams

h. All communications protocols, including data formats and meanings, command characters, instruction set, and a trace of the action initiated by each type of message

1.3.5 Contractor Proprietary Information:

1.3.5.1 Restricted Rights: Software is provided with "restrictead rights" as defined in the SPECIAL PROVISIONS.

1.3.5.2 Limited Rights: Technical data is provided with "limited rights" as defined in the SPECIAL PROVISIONS, including:

a. Interface requirements and protocol

b. Description of the algorithm for the applications program

c. Description of the implementation and the application programs including interfaces with calling and called programs

d. All communication protocols including data formats and meanings, command characteristics, instruction set, and a trace of the action initiated by each type of message

e. Functional design

f. Software documentation

g. Signal identification and timing diagrams

h. Hardware schematics, drawings, and theory of operation

i. Memory maps

1.3.5.3 Unlimited Rights: All applications programs specifically written for this project shall be delivered with "unlimited rights" as defined in the SPECIAL PROVISIONS.

1.3.5.4 Data Entry Forms: Provide data entry forms to be completed by the Government to define the following information for inclusion into the physical security system for each point or system by the Contractor. Submit formats 90 days prior to the Contractor's need date.

1.3.6 SPECIAL PROVISIONS include in this contraact from the Department of Defense Defense Acquisition Regulations (DAR) clauses:

7-104.9(a) - Rights in Technical Data and Computer Software (1981 May)

7-104.9(b) - Limited Rights

7-104.9(h) - Technical Data - Witholding of Payment

7-104.9(n) - Requirements for Data

7-104.9(o) - Technical Data Warranty

1.4 TRAINING:

1.4.1 Instructions to Government Personnel: Training shall be furnished to designated Government personnel. Provide the services of competent instructors who will give full instruction to designated personnel in the operation, maintenance, and programming of the physical security system. Orient the training specifically to the system installed. Instructors shall be thoroughly familiar with the subject matter they are to teach. The Government personnel designated to attend this training will have a high school education or equivalent. The number of training days of instruction furnished shall be as specified. Provide a training manual for each student at each training phase which describes in detail the data included in each training program. Provide one additional copy for archiving. Provide equipment and material required for classroom training. Provide a list of additional course and offerors, noting any courses recommended. List each training course individually by name, including duration, approximate cost per person, and location of course.

1.4.2 Training Program: Accomplish the training program as specified. A training day is defined as eight hours of instruction, including two 15-minute breaks and excluding lunch time, Monday through Friday. Conduct training at the site for three consecutive days, 10 days prior to the start of system operational acceptance testing at a time mutually agreeable between the Contractor and the Government. Train five operating personnel in the functional operations of the system and the procedures that personnel will follow in systems operation. This phase of training shall include:

a. Operation of equipment

b. Programming

c. Diagnostics

d. Failure recovery procedures

e. Alarm formats (where applicable)

f. Maintenance and calibration

g. Troubleshooting, diagnostics, and repair instructions

1.5 DATA TRANSMISSION MEDIA (DTM):

1.5.1 General: Provide all DTM, inluding all Modulator/Demodulator (MODEMS) and line drivers required. Test all DTM and furnish a report to the Contracting Officer demonstrating compliance as shown. Provide overvoltage and surge protection as specified.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT: Provide materials and equipment listed by UL or approved by Factory Mutual (FM) System, when such equipment is listed as appoved. Where two units of the same class of equipment are required, these units shall be products of a single manufacturer; however, the component parts of the system need not be the products of a single manufacturer. Each major component of equipment shall have the manufacturer's name and address and the model and serial number in a conspicuous place.

2.1.1 Conduit and Fittings: Electrical metallic tubing (EMT); ANSI C80.3; fittings for EMT shall be the compression type.

2.1.2 Outlet Boxes and Covers: UL 514, cadmium or zinc-coated if of ferrous metal.

2.1.3 WIRE AND CABLE:

2.1.3.1 General: Provide wire and cable, including communication media.

2.1.3.1.1 Communication Cables shall be a minimum of 22 AWG and shall conform to REA PE20 for indoor cable. Coaxial cable shall be low loss coaxial cable with losses not exceeding 2.5 dB per 100 feet at 200 MHz with a characteristic impedance of 75 ohms.

2.1.3.1.2 Control Wiring shall be 18 AWG minimum with 600-volt insulation, twisted and shielded, two or three wire to match function hardware.

2.1.3.1.3 Sensor Wiring shall be 20 AWG minimum twisted and shielded, two or three wire to match function hardware.

2.1.3.1.4 Power wiring shall meet the applicable requirements of NFPA 70 and UL for the type of insulation, jacket, and conductor specified. Conductor size as indicated is based on copper; conductor type shall be THW or THWN.

2.1.4 Intrusion Device: Provide a concealed mounted magnetic switch in door frame member. Wire and connect switch to the physical security system.

2.1.4.1 Magnetic Contact Switch, Form C (SPDT) Switching Contacts: Minimum contact ratings, 5 watts, 0.5 amp, 100 volts DC. Switch unit shall contain integral adjustment to allow the balancing of magnetic field between the switch unit and the magnet unit. Any attempt to defeat the balanced magnetic field shall cause an alarm condition.

2.1.5 Electric Strike: Provide mortised electric strike in door frame member. Wire and connect strike to the physical security system.

2.1.6 Electric Strike Override Device: Provide surface mounted momentary contact push button. Wire and connect device to the physical security system.

PART 3 - EXECUTION

3.1 GENERAL:

3.1.1 Installation: Install all system components and appurtenances in accordance with the manufacturer's recommendations and as shown. Provide all necessary interconnections, services, and adjustments required for a complete operable system. All electrical work shall be in accordance with NFPA 70 and as specified.

3.2 WIRING METHOD:

3.2.1 Power Wiring: Install in conduit.

3.2.2 Coaxial Cables: Do not bend flexible coaxial cables in a radius less than ten times the cable outside diameter.

3.2.2.1 Use vinyl tape, sleeves, or grommets to protect cable from vibration at points where they pass around sharp corners or through penetrations.

3.3 GROUNDING shall be in accordance with ANSI C2. All ground wire shall be copper. Demonstrate ground resistance as specified.

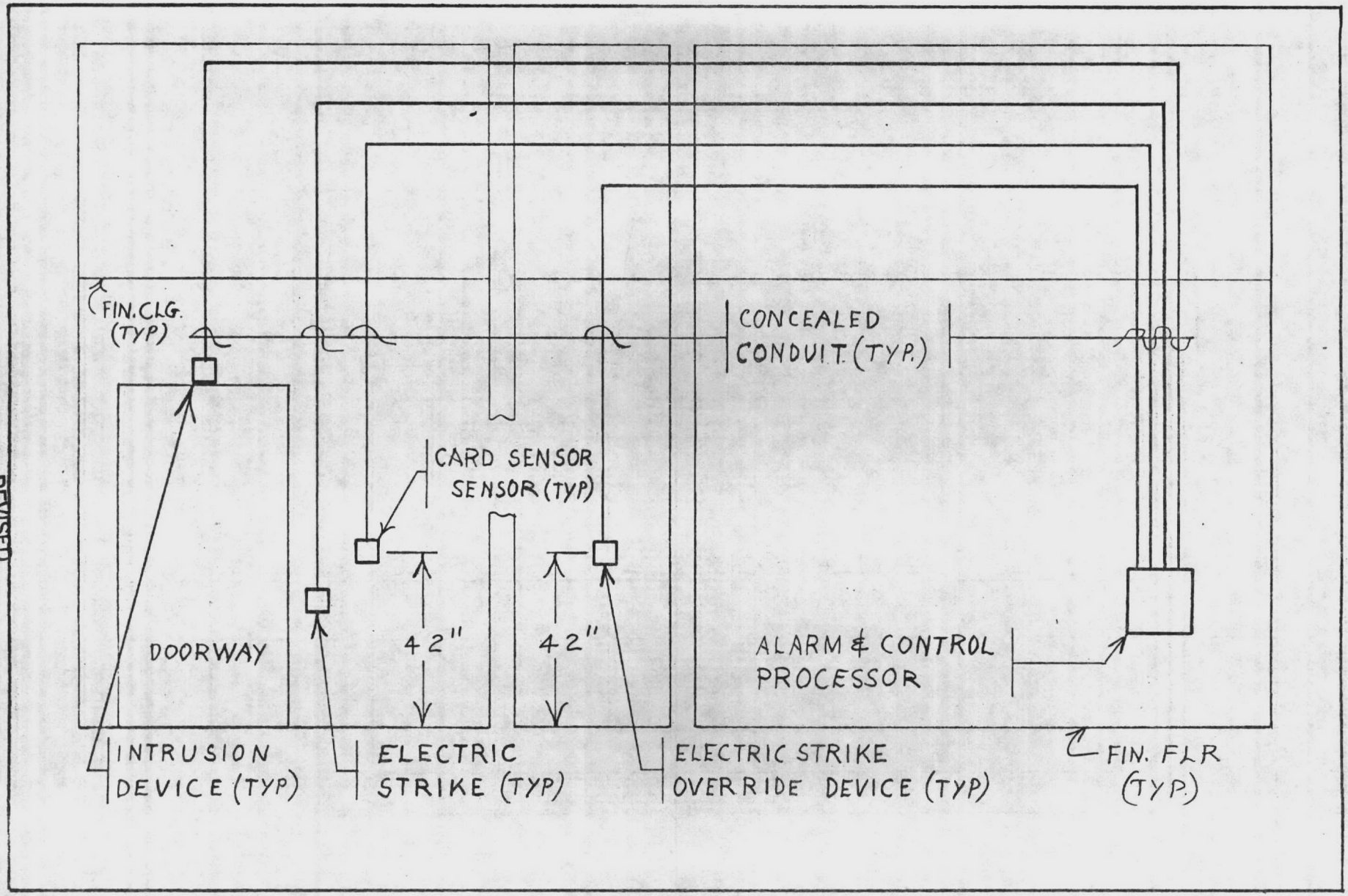
3.4 FIELD TESTS: As an exception to requirements that may be stated elsewhere in the contract, the Contracting Officer shall be given ten working days notice prior to each test.

3.4.1 When installation of the system is complete, calibrate equipment and verify transmission media operation before system is placed on line. All testing, calibrating, adjusting and operational acceptance tests shall be completed by the Contractor. The Contracting Officer or his representative will witness all tests. Every device shall be tested in all modes of operation. The system shall be tested in accordance with the approved test procedure and demonstrated to equal or exceed the specified system equipment and system operational requirements.

3.4.2 Proof of system performance shall rest with the installer to the satisfaction of the Contracting Officer.

3.4.3 Grounding System Test: Test the grounding system to assure continuity and assure the resistance to the panelboard ground bar is not excessive.

END OF SECTION



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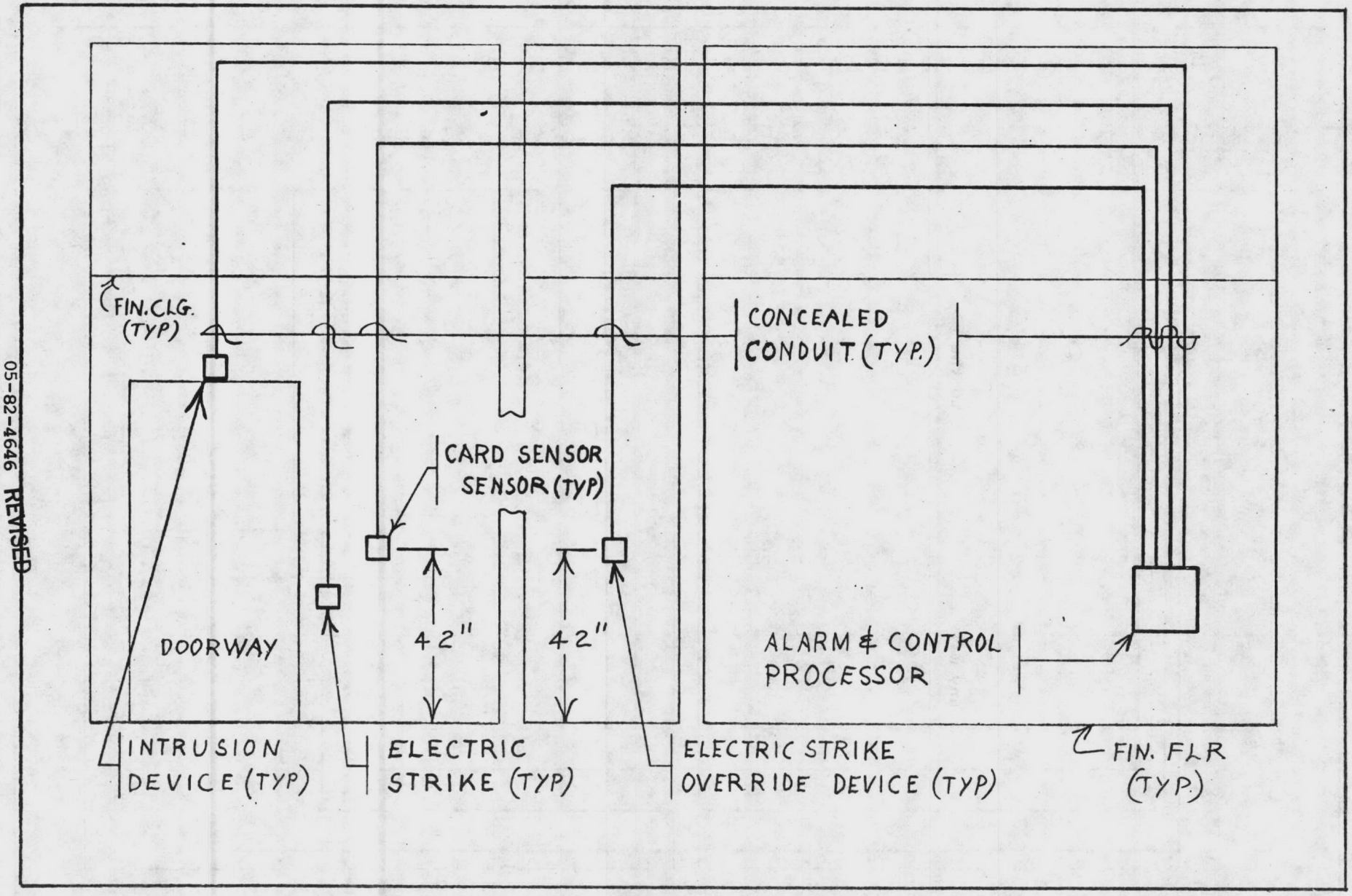
PHYSICAL SECURITY SYSTEM BLOCK DIAGRAM

FIGURE 1.



PHYSICAL SECURITY SYSTEM BLOCK DIAGRAM

FIGURE 1.

SECTION 11030
SECURITY SCREENS

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. Publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

A304-78 Alloy Steel Bars Subject to End-Quench Hardenability Requirements

1.2 APPROVALS shall be obtained before custom fabrication is started and before delivery of any materials or equipment to the project.

1.3 SHOP DRAWINGS shall be submitted to and approved by the Contracting Officer. Security screens shall not be fabricated or delivered prior to the approval of the shop drawings. Shop drawings shall indicate elevation of security screens, all dimensions, gages of metal, fastenings and details of construction, hardware and operation.

1.4 DELIVERY AND STORAGE: Use care in handling and transportation of security screens. Store in a dry location out of contact with the ground.

PART 2 - MATERIALS

2.1 SECURITY SCREEN UNITS shall consist of a sub-frame; hinged main frame; wire cloth and support assembly; special lock; lock bolts; concealed hinges; screws; anchors and all other fittings necessary to make a complete installation including scribe angles when required.

2.1.1 Main frames shall be reinforced, open channel type with removable concealment plates. The open channel frame shall be formed of 12 gage steel and reinforced by a "Z" shaped bar formed of 12 gage steel that supports the wire cloth. Removable concealment plates formed from 18 gage steel shall be applied to the back of the main frame to conceal the locking mechanism and the wire cloth support. The corners of the main frame shall be electric float welded and ground smooth.

2.1.2 Sub-frames shall be formed of 12 gage steel on all four sides. Corners shall be uniformly welded and ground smooth to provide a rigid sub-frame within which the main frame operates.

2.1.3 Wire cloth shall be high tensile strength stainless steel type 18/8, alloy ASTM 304, woven 12 mesh to the inch from .028 diameter wire and double crimped. Tensile strength shall be not less than 800 pounds per linear inch after weaving.

2.1.4 Support assembly forthe wire cloth shall be 1/2-inch by 3/8-inch full hard tempered steel shock-distributing bars around which the wire is wrapped.

These bars shall run continuously on all four sides of the wire cloth. The shock absorbing system shall have a capacity of 175 pounds per one-half inch of movement and individual shock absorbers shall be spaced not more than eight inches apart.

2.1.5 Hardware shall consist of concealed type hinges of electroplated steel with 1/4-inch diameter loose brass pins and integral compression guards and a locking system consisting of case-hardened steel bolts operating simultaneously from a bitt key lock.

2.1.6 Finish of all interior and exterior surfaces of sub-frames, main frames, and concealment plates shall be bonderized and two coats of paint shall be applied - one coat of primer and one coat of electrostatically applied baked-on gray enamel.

PART 3 - EXECUTION

3.1 INSTALLATION: Sub-frames shall be secured to existing masonry walls and existing concrete by using lead inserts drilled into place. Stainless steel fasteners shall be used in all installations.

END OF SECTION

SECTION 16402
INTERIOR WIRING WORK

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The following publications form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

C2-1981 National Eleactrical Safety Code

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

70-1981 National Electrical Code (NEC)

UNDERWRITERS' LABORATORIES, INC. (UL):

83-1979 Wires, Thermoplastic-Insulated
467-1972 (R Nov 76) Grounding and Bonding Equipment, Electrical
486-1976 (R Feb 77) Wire Connectors and Soldering Lugs
510-1976 Tape, Insulating
1242-1977 (DRAFT) Conduit, Intermediate, Metal

1.2 SUBMITTALS:

1.2.1 Materials and Equipment Schedules: As soon as practicable after notice to proceed and baefore commencement of installatin of materials, a complete list of materials to be incorporated in the work shall be submitted to the Contracting Officer. List shall include catalog numbers, cuts, diagrams, and such other descriptive data as may be required. No consideration will be given to partial lists submitted from time to time. Approval of materials will be based on manufacturer's published ratings. Materials listed that are not in accordance with the speacification requirements will be rejected.

1.3 GENERAL REQUIREMENTS: The work includes the provision of modification of existing interior electrical systems. Each system shall be complete and ready for operation. The contract drawings indicate the extent and general arrangement of equipment, fixtures, and conduit and wiring systems. If any departures are deemed necessary by the Contrctor, details of such departures and the reasons therefor shall be submitted to the Contracting Officer for approval within 30 days after award of the contract. In each of the standards referred to herein, the advisory provisions shall be aconsidered to bae mandatory, as though the word "shall" had been substituted for "should" wherever it appears. Reference in these standards to the "authority having jurisdiction" or words of similar meaning shall be interpreted to mean the Contracting Officer. Work and materials shall conform to NFPA 70.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT: All items including, but not limited to, devices, outlets, boxes, and fittings shall be sized in accordance with the National Electrical Code (NEC) unless indicated or specified otherwise.

2.1.1 Wires and Cables: Conductor sizes are expressed in American Wire Gage (AWG). Minimum conductor size shall be No. 12 AWG. Wires No. 8 and larger shall be stranded. Conductors shall be copper.

2.1.2 Splice and Termination Components: UL 486 for wire connectors and soldering lugs; UL 510 for insulating tapes. Connections in wires No. 10 AWG and smaller shall be made with insulated pressure type connectors or wirenut type connectors. Splices for wires No. 8 AWG and larger shall e made with a solderless connector.

2.1.3 Grounding and Bonding Equipment: UL 467.

PART 3 - EXECUTION

3.1 ALUMINUM CONDUCTORS shall not be used.

3.2 SPLICES AND TERMINATIONS shall be made in outlet or junction boxes and shall be mechanically and electrically secure, using proper thickness of tape. Uninsulated mechanical connectors of every kind shall be taped. Splices and terminations shall be covered with an insulation material equivalent to the conductor insulation. Flashover or insulation value of joints shall be at least 100 percent in excess of wire insulation.

3.3 GROUNDING AND BONDING: Excelt where specifically indicated otherwise, all exposed non-current-carrying metallic parts of electrical equipment, grounding conductor of nonmetallic-sheathed cabales, and neutral conductor of wiring systems shall be grounded. The ground connection shall be made at the main service equipment and shall be extended to the point of entrance of the metallic water service and to a grounding rod. Connection to the grounding rod and to the water pipe shall be made by a suitable ground clamp or lug connection to a plugged tee. If flanged pipes are encountered, connection shall be made with the lug bolted to the street side of the flanged connection.

3.4 FIELD TESTS: The Contractor shall perform all field tests and shall provide all labor, equipment and incidental required for testing, except that the Government will provide electric power required for the tests. All defective material and workmanship disclosed shall be corrected by the Contractor at no cost to the Government. The Contractor shall show by demonstration in service that all circuits and devices are in good operating condition.

END OF SECTION

SUPERSEDEAS DECISION

STATE: NORTH CAROLINA
COUNTIES: BRUNSWICK, CARTERET, COLUMBUS, CRAVEN, DUPLIN, JONES, LENOIR, NEW HANOVER, ONSLOW, PAMLICO, AND PENDER
DECISION NUMBER: NC81-1201 DATE: DATE OF PUBLICATION
Supersedes Decisions Number NC81-1181, dated January 23, 1981, 46 FR 7745; NC81-1182, dated January 23, 1981, 46 FR 7744; Number NC81-1147, dated December 30, 1980, 45 FR 86200.
DESCRIPTION OF WORK: BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartments up to and including four stories).

	Basic Hr. Rate	FRINGE BENEFITS PAYMENTS			
		H&W	Pensions	Vacation	Edu and/or Appr. Tr.
Asbestos Workers	$7.26				
Bricklayers	7.10				
Carpenters	6.02				
Cement Masons	5.68				
Drywell Mechanics	7.00				
Electricians	6.22				
Electronic Technicians	4.50				
Glaziers	5.38				
Ironworkers	6.66				
Laborers:					
Laborers - General	3.78				
Pipe Layers	4.94				
Millworkers	9.45				
Painters	5.00				
Plasters	6.00				
Plumbers & Pipefitters	6.52				
Roofers	5.91				
Sheet Metal Workers	6.38				
Soft Floor Layers	7.00				
Sprinkler Fitters	7.95				
Tile Setters	6.00				
Truck Drivers	3.90				
Welders - Rate for Craft					
Power Equipment Operators:					
Asphalt Raker	4.27				
Backhoe	5.32				
Bulldozer	5.25				
Crance	6.80				
Distributor	4.70				
Fork Lift	6.50				
Front End Loader	4.50				
Motor Grader	5.36				
Paver - Screed	4.25				
Roller	5.00				
Scraper - Pan	4.60				
Tractor	5.00				

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR, 5.5(a)(1)(ii)).

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WAGE DETERMINATION